

# LIBISIS Reference Manual

1

Generated by Doxygen 1.4.7-20060810

Mon Feb 19 18:32:25 2007



# Contents

<b>1</b>	<b>LIBISIS Index</b>	<b>1</b>
1.1	Introduction . . . . .	1
<b>2</b>	<b>LIBISIS Namespace Index</b>	<b>3</b>
2.1	LIBISIS Namespace List . . . . .	3
<b>3</b>	<b>LIBISIS Class Index</b>	<b>7</b>
3.1	LIBISIS Class List . . . . .	7
<b>4</b>	<b>LIBISIS File Index</b>	<b>13</b>
4.1	LIBISIS File List . . . . .	13
<b>5</b>	<b>LIBISIS Namespace Documentation</b>	<b>17</b>
5.1	IXMaperture Namespace Reference . . . . .	17
5.2	IXMarraymanips Namespace Reference . . . . .	20
5.3	IXMattenuator Namespace Reference . . . . .	22
5.4	IXMbase Namespace Reference . . . . .	24
5.5	IXMbridge Namespace Reference . . . . .	30
5.6	IXMchopper_instrument Namespace Reference . . . . .	33
5.7	IXMcrystalanalyser Namespace Reference . . . . .	36
5.8	IXMdata Namespace Reference . . . . .	37
5.9	IXMdata_source Namespace Reference . . . . .	45
5.10	IXMdataset_1d Namespace Reference . . . . .	49
5.11	IXMdataset_2d Namespace Reference . . . . .	59
5.12	IXMdataset_3d Namespace Reference . . . . .	77
5.13	IXMdataset_4d Namespace Reference . . . . .	79
5.14	IXMdataset_common Namespace Reference . . . . .	81
5.15	IXMdataset_nd Namespace Reference . . . . .	82
5.16	IXMdatum Namespace Reference . . . . .	83
5.17	IXMdatum_array Namespace Reference . . . . .	86

---

5.18 IXMderivative Namespace Reference . . . . .	89
5.19 IXMdet_he3 Namespace Reference . . . . .	90
5.20 IXMdet_solid Namespace Reference . . . . .	92
5.21 IXMdetector Namespace Reference . . . . .	94
5.22 IXMdiffraction_instrument Namespace Reference . . . . .	101
5.23 IXMeffdet_index Namespace Reference . . . . .	104
5.24 IXMefficiency Namespace Reference . . . . .	107
5.25 IXMerrorcodes Namespace Reference . . . . .	108
5.26 IXMfermi_chopper Namespace Reference . . . . .	110
5.27 IXMfileio Namespace Reference . . . . .	116
5.28 IXMgeometry Namespace Reference . . . . .	123
5.29 IXMgroup Namespace Reference . . . . .	128
5.30 IXMgroups Namespace Reference . . . . .	130
5.31 IXMhistory Namespace Reference . . . . .	136
5.32 IXMindex Namespace Reference . . . . .	139
5.33 IXMinput_source Namespace Reference . . . . .	140
5.34 IXMinstrument Namespace Reference . . . . .	143
5.35 IXMintegrate Namespace Reference . . . . .	148
5.36 IXMio Namespace Reference . . . . .	150
5.37 IXMisis_raw_file Namespace Reference . . . . .	151
5.38 IXMlattice Namespace Reference . . . . .	160
5.39 IXMlibcore Namespace Reference . . . . .	162
5.40 IXMmap Namespace Reference . . . . .	164
5.41 IXMmask Namespace Reference . . . . .	169
5.42 IXMmaths_basis Namespace Reference . . . . .	173
5.43 IXMmaths_geometry Namespace Reference . . . . .	175
5.44 IXMmaths_projection Namespace Reference . . . . .	176
5.45 IXMmaths_utils Namespace Reference . . . . .	178
5.46 IXMmemory Namespace Reference . . . . .	179
5.47 IXMmoderator Namespace Reference . . . . .	181
5.48 IXMmoments Namespace Reference . . . . .	184
5.49 IXMmoments_utils Namespace Reference . . . . .	186
5.50 IXMneutron_constants Namespace Reference . . . . .	187
5.51 IXMneutron_units Namespace Reference . . . . .	189
5.52 IXMoperation Namespace Reference . . . . .	197
5.53 IXMoperation_interfaces Namespace Reference . . . . .	209

---

5.54 IXMoptions Namespace Reference . . . . .	210
5.55 IXMorientation Namespace Reference . . . . .	212
5.56 IXMpeaks Namespace Reference . . . . .	218
5.57 IXMphysical_constants Namespace Reference . . . . .	221
5.58 IXMpointer_to_array Namespace Reference . . . . .	223
5.59 IXMrebin Namespace Reference . . . . .	224
5.60 IXMrebunch Namespace Reference . . . . .	226
5.61 IXMregroup Namespace Reference . . . . .	231
5.62 IXMrunfile Namespace Reference . . . . .	233
5.63 IXMsample Namespace Reference . . . . .	246
5.64 IXMshape Namespace Reference . . . . .	250
5.65 IXMshift Namespace Reference . . . . .	261
5.66 IXMsort Namespace Reference . . . . .	262
5.67 IXMsource Namespace Reference . . . . .	263
5.68 IXMspectra Namespace Reference . . . . .	265
5.69 IXMstatus Namespace Reference . . . . .	269
5.70 IXMsw_bridge Namespace Reference . . . . .	274
5.71 IXMttestclass Namespace Reference . . . . .	277
5.72 IXMtools Namespace Reference . . . . .	281
5.73 IXMtranslation Namespace Reference . . . . .	291
5.74 IXMtype_definitions Namespace Reference . . . . .	295
5.75 IXMunits Namespace Reference . . . . .	301
5.76 IXMunits_utils Namespace Reference . . . . .	304
5.77 IXMunspike Namespace Reference . . . . .	308
5.78 IXMuser Namespace Reference . . . . .	309
5.79 IXMworkspace Namespace Reference . . . . .	311
5.80 IXMwrapped_var Namespace Reference . . . . .	314
5.81 IXMws_bridge Namespace Reference . . . . .	319
5.82 m_mrgrnk Namespace Reference . . . . .	323
5.83 m_refsor Namespace Reference . . . . .	324
5.84 m_unirnk Namespace Reference . . . . .	326
5.85 m_valmed Namespace Reference . . . . .	328
5.86 NE Namespace Reference . . . . .	329
5.87 NXmodule Namespace Reference . . . . .	330
5.88 NXUmodule Namespace Reference . . . . .	348
<b>6 LIBISIS Class Documentation</b>	<b>377</b>

6.1	IXMwrapped_var::base_object Struct Reference . . . . .	377
6.2	NXUmodule::data_type Struct Reference . . . . .	378
6.3	ieee_double Struct Reference . . . . .	379
6.4	ieee_single Struct Reference . . . . .	380
6.6	IXMstatus::interface Interface Reference . . . . .	382
6.6	IXMstatus::interface Interface Reference . . . . .	382
6.7	IXMdataset_1d::interface Interface Reference . . . . .	383
6.8	IXMfileio::IXBfileRead Interface Reference . . . . .	384
6.9	IXMfileio::IXBfileReadAlloc Interface Reference . . . . .	386
6.10	IXMfileio::IXBfileReadPtr Interface Reference . . . . .	387
6.11	IXMfileio::IXBfileWrite Interface Reference . . . . .	388
6.12	IXMoperation_interfaces::IXBgetFromBinding Interface Reference . . . . .	390
6.13	IXMoperation_interfaces::IXBgetFromBindingAlloc Interface Reference . . . . .	391
6.14	IXMstatus::IXFadd_status Interface Reference . . . . .	392
6.15	IXMarraymanips::IXFarrayCheck Interface Reference . . . . .	393
6.16	IXMarraymanips::IXFarrayCos Interface Reference . . . . .	394
6.17	IXMarraymanips::IXFarrayCosh Interface Reference . . . . .	395
6.18	IXMarraymanips::IXFarrayDivide Interface Reference . . . . .	396
6.19	IXMarraymanips::IXFarrayDivideAD Interface Reference . . . . .	397
6.20	IXMarraymanips::IXFarrayDivideDA Interface Reference . . . . .	398
6.21	IXMarraymanips::IXFarrayExp Interface Reference . . . . .	399
6.22	IXMarraymanips::IXFarrayLog Interface Reference . . . . .	400
6.23	IXMarraymanips::IXFarrayMinus Interface Reference . . . . .	401
6.24	IXMarraymanips::IXFarrayMinusAD Interface Reference . . . . .	402
6.25	IXMarraymanips::IXFarrayMinusDA Interface Reference . . . . .	403
6.26	IXMarraymanips::IXFarrayPlus Interface Reference . . . . .	404
6.27	IXMarraymanips::IXFarrayPlusAD Interface Reference . . . . .	405
6.28	IXMarraymanips::IXFarrayPlusDA Interface Reference . . . . .	406
6.29	IXMarraymanips::IXFarrayPower Interface Reference . . . . .	407
6.30	IXMarraymanips::IXFarraySin Interface Reference . . . . .	408
6.31	IXMarraymanips::IXFarraySinh Interface Reference . . . . .	409
6.32	IXMarraymanips::IXFarrayTan Interface Reference . . . . .	410
6.33	IXMarraymanips::IXFarrayTanh Interface Reference . . . . .	411
6.34	IXMarraymanips::IXFarrayTimes Interface Reference . . . . .	412
6.35	IXMarraymanips::IXFarrayTimesAD Interface Reference . . . . .	413
6.36	IXMarraymanips::IXFarrayTimesDA Interface Reference . . . . .	414

---

6.37	IXMdata_source::IXFcheck Interface Reference . . . . .	415
6.38	IXMhistory::IXFcheck Interface Reference . . . . .	416
6.39	IXMoperation::IXFcheck Interface Reference . . . . .	417
6.40	IXMstatus::IXFcheck_status Interface Reference . . . . .	418
6.41	IXMstatus::IXFclear_status Interface Reference . . . . .	419
6.42	IXMdatum_array::IXFcos Interface Reference . . . . .	420
6.43	IXMdataset_1d::IXFcos Interface Reference . . . . .	421
6.44	IXMmaths_basis::IXFcos Interface Reference . . . . .	422
6.45	IXMdataset_2d::IXFcos Interface Reference . . . . .	423
6.46	IXMdatum::IXFcos Interface Reference . . . . .	424
6.47	IXMdatum_array::IXFcosh Interface Reference . . . . .	425
6.48	IXMdataset_1d::IXFcosh Interface Reference . . . . .	426
6.49	IXMdataset_2d::IXFcosh Interface Reference . . . . .	427
6.50	IXMdatum::IXFcosh Interface Reference . . . . .	428
6.51	IXMorientation::IXFcreate Interface Reference . . . . .	429
6.52	IXMtestclass::IXFcreate Interface Reference . . . . .	430
6.53	IXMmaths_basis::IXFcross Interface Reference . . . . .	431
6.54	IXMtranslation::IXFcross Interface Reference . . . . .	432
6.55	IXMoperation::IXFdisplay Interface Reference . . . . .	433
6.56	IXMdatum_array::IXFdivide Interface Reference . . . . .	435
6.57	IXMdataset_1d::IXFdivide Interface Reference . . . . .	436
6.58	IXMdataset_2d::IXFdivide Interface Reference . . . . .	437
6.59	IXMdatum::IXFdivide Interface Reference . . . . .	438
6.60	IXMdataset_1d::IXFdivide_dataset_1d Interface Reference . . . . .	439
6.61	IXMdataset_2d::IXFdivide_dataset_2d Interface Reference . . . . .	440
6.62	IXMdatum::IXFdivide_Datum Interface Reference . . . . .	441
6.63	IXMdatum_array::IXFdivide_Datum_array Interface Reference . . . . .	442
6.64	IXMdataset_2d::IXFdivide_X Interface Reference . . . . .	443
6.65	IXMdataset_2d::IXFdivide_X_dataset_2d Interface Reference . . . . .	444
6.66	IXMdataset_2d::IXFdivide_Y Interface Reference . . . . .	445
6.67	IXMdataset_2d::IXFdivide_Y_dataset_2d Interface Reference . . . . .	446
6.68	IXMmaths_basis::IXFdot Interface Reference . . . . .	447
6.69	IXMtranslation::IXFdot Interface Reference . . . . .	448
6.70	IXMdatum_array::IXFexp Interface Reference . . . . .	449
6.71	IXMdataset_1d::IXFexp Interface Reference . . . . .	450
6.72	IXMdataset_2d::IXFexp Interface Reference . . . . .	451

6.73	IXMdatum::IXFexp Interface Reference . . . . .	452
6.74	IXMfileio::IXFfile_read Interface Reference . . . . .	453
6.75	IXMdata_source::IXFfile_read Interface Reference . . . . .	454
6.76	IXMhistory::IXFfile_read Interface Reference . . . . .	455
6.77	IXMfileio::IXFfile_type Interface Reference . . . . .	456
6.78	IXMfileio::IXFfile_write Interface Reference . . . . .	457
6.79	IXMdata_source::IXFfile_write Interface Reference . . . . .	458
6.80	IXMhistory::IXFfile_write Interface Reference . . . . .	459
6.81	IXMdiffraction_instrument::IXFget_emode Interface Reference . . . . .	460
6.82	IXMchopper_instrument::IXFget_emode Interface Reference . . . . .	461
6.83	IXMbase::IXFget_integer_array Interface Reference . . . . .	462
6.84	IXMdiffraction_instrument::IXFget_ptr Interface Reference . . . . .	463
6.85	IXMchopper_instrument::IXFget_ptr Interface Reference . . . . .	464
6.86	IXMisis_raw_file::IXFget_raw Interface Reference . . . . .	465
6.87	IXMbase::IXFget_real_array Interface Reference . . . . .	468
6.88	IXMdataset_2d::IXFintegrate_x_dataset_2d Interface Reference . . . . .	469
6.89	IXMgroups::IXFis_member_groups Interface Reference . . . . .	470
6.90	IXMdatum_array::IXFlog Interface Reference . . . . .	471
6.91	IXMdataset_1d::IXFlog Interface Reference . . . . .	472
6.92	IXMdataset_2d::IXFlog Interface Reference . . . . .	473
6.93	IXMdatum::IXFlog Interface Reference . . . . .	474
6.94	IXMindex::IXFflower_index Interface Reference . . . . .	475
6.95	IXMgroups::IXFmember_list_groups Interface Reference . . . . .	476
6.96	IXMdataset_1d::IXFminus Interface Reference . . . . .	477
6.97	IXMdataset_2d::IXFminus Interface Reference . . . . .	478
6.98	IXMdatum::IXFminus Interface Reference . . . . .	479
6.99	IXMdatum_array::IXFminus Interface Reference . . . . .	480
6.100	IXMdataset_1d::IXFminus_dataset_1d Interface Reference . . . . .	481
6.101	IXMdataset_2d::IXFminus_dataset_2d Interface Reference . . . . .	482
6.102	IXMdatum::IXFminus_Datum Interface Reference . . . . .	483
6.103	IXMdatum_array::IXFminus_datum_array Interface Reference . . . . .	484
6.104	IXMdataset_2d::IXFminus_X Interface Reference . . . . .	485
6.105	IXMdataset_2d::IXFminus_X_dataset_2d Interface Reference . . . . .	486
6.106	IXMdataset_2d::IXFminus_Y Interface Reference . . . . .	487
6.107	IXMdataset_2d::IXFminus_Y_dataset_2d Interface Reference . . . . .	488
6.108	IXMmaths_basis::IXFnorm Interface Reference . . . . .	489



---

6.109IXMtranslation::IXFnorm Interface Reference . . . . .	490
6.112IXMoperation::IXFoperation_run Interface Reference . . . . .	493
6.112IXMoperation::IXFoperation_run Interface Reference . . . . .	493
6.112IXMoperation::IXFoperation_run Interface Reference . . . . .	493
6.113IXMoperation::IXFoperation_run_alloc Interface Reference . . . . .	494
6.114IXMoperation::IXFoperation_run_ptr Interface Reference . . . . .	495
6.115IXMoperation::IXFoperationMake Interface Reference . . . . .	496
6.116IXMoperation::IXFoperationPrint Interface Reference . . . . .	498
6.117IXMgroups::IXFparent_groups Interface Reference . . . . .	499
6.118IXMgroups::IXFparent_id_groups Interface Reference . . . . .	500
6.119IXMgroups::IXFparent_list_groups Interface Reference . . . . .	501
6.120IXMdataset_1d::IXFplus Interface Reference . . . . .	502
6.121IXMdataset_2d::IXFplus Interface Reference . . . . .	503
6.122IXMdatum::IXFplus Interface Reference . . . . .	504
6.123IXMdatum_array::IXFplus Interface Reference . . . . .	505
6.124IXMdataset_1d::IXFplus_dataset_1d Interface Reference . . . . .	506
6.125IXMdataset_2d::IXFplus_dataset_2d Interface Reference . . . . .	507
6.126IXMdatum::IXFplus_Datum Interface Reference . . . . .	508
6.127IXMdatum_array::IXFplus_Datum_array Interface Reference . . . . .	509
6.128IXMdataset_2d::IXFplus_X Interface Reference . . . . .	510
6.129IXMdataset_2d::IXFplus_X_dataset_2d Interface Reference . . . . .	511
6.130IXMdataset_2d::IXFplus_Y Interface Reference . . . . .	512
6.131IXMdataset_2d::IXFplus_Y_dataset_2d Interface Reference . . . . .	513
6.132IXMdata::IXFpopulate_data Interface Reference . . . . .	514
6.133IXMspectra::IXFpopulate_spectra Interface Reference . . . . .	515
6.134IXMdatum_array::IXFpower Interface Reference . . . . .	516
6.135IXMdataset_1d::IXFpower Interface Reference . . . . .	517
6.136IXMdataset_2d::IXFpower Interface Reference . . . . .	518
6.137IXMdatum::IXFpower Interface Reference . . . . .	519
6.138IXMdataset_1d::IXFpower_dataset_1d Interface Reference . . . . .	520
6.139IXMdataset_2d::IXFpower_dataset_2d Interface Reference . . . . .	521
6.140IXMdatum::IXFpower_Datum Interface Reference . . . . .	522
6.141IXMdatum_array::IXFpower_Datum_array Interface Reference . . . . .	523
6.142m_mrgrnk::IXFrank Interface Reference . . . . .	524
6.143IXMgroups::IXFremove_groups Interface Reference . . . . .	525
6.144IXMstatus::IXFreport_status Interface Reference . . . . .	526

6.145IXMbase::IXFset_integer_array Interface Reference . . . . .	527
6.146IXMbase::IXFset_real_array Interface Reference . . . . .	528
6.147IXMorientation::IXFsetgen_orientation Interface Reference . . . . .	529
6.148IXMdatum_array::IXFsin Interface Reference . . . . .	530
6.149IXMdataset_1d::IXFsin Interface Reference . . . . .	531
6.150IXMdataset_2d::IXFsin Interface Reference . . . . .	532
6.151IXMdatum::IXFsin Interface Reference . . . . .	533
6.152IXMdatum_array::IXFsinh Interface Reference . . . . .	534
6.153IXMdataset_1d::IXFsinh Interface Reference . . . . .	535
6.154IXMdataset_2d::IXFsinh Interface Reference . . . . .	536
6.155IXMdatum::IXFsinh Interface Reference . . . . .	537
6.156IXMinput_source::IXFsize Interface Reference . . . . .	538
6.157IXMisis_raw_file::IXFsize_raw Interface Reference . . . . .	539
6.158IXMshape::IXFsolid_angle Interface Reference . . . . .	540
6.159IXMgeometry::IXFsolid_angle Interface Reference . . . . .	541
6.160m_refsor::IXFsort Interface Reference . . . . .	542
6.161IXMdataset_1d::IXFtan Interface Reference . . . . .	543
6.162IXMdataset_2d::IXFtan Interface Reference . . . . .	544
6.163IXMdatum_array::IXFtan Interface Reference . . . . .	545
6.164IXMdatum::IXFtan Interface Reference . . . . .	546
6.165IXMdatum_array::IXFtanh Interface Reference . . . . .	547
6.166IXMdataset_1d::IXFtanh Interface Reference . . . . .	548
6.167IXMdataset_2d::IXFtanh Interface Reference . . . . .	549
6.168IXMdatum::IXFtanh Interface Reference . . . . .	550
6.169IXMdataset_1d::IXFtimes Interface Reference . . . . .	551
6.170IXMdataset_2d::IXFtimes Interface Reference . . . . .	552
6.171IXMdatum::IXFtimes Interface Reference . . . . .	553
6.172IXMdatum_array::IXFtimes Interface Reference . . . . .	554
6.173IXMdataset_1d::IXFtimes_dataset_1d Interface Reference . . . . .	555
6.174IXMdataset_2d::IXFtimes_dataset_2d Interface Reference . . . . .	556
6.175IXMdatum::IXFtimes_Datum Interface Reference . . . . .	557
6.176IXMdatum_array::IXFtimes_Datum_array Interface Reference . . . . .	558
6.177IXMdataset_2d::IXFtimes_X Interface Reference . . . . .	559
6.178IXMdataset_2d::IXFtimes_X_dataset_2d Interface Reference . . . . .	560
6.179IXMdataset_2d::IXFtimes_Y Interface Reference . . . . .	561
6.180IXMdataset_2d::IXFtimes_Y_dataset_2d Interface Reference . . . . .	562

---

6.181IXMfermi_chopper::IXFtransmission_fermi_chopper Interface Reference . . . . .	563
6.182IXMfermi_chopper::IXFtransmission_odd_fermi_chopper Interface Reference . . . . .	564
6.183m_unirnk::IXFunique_rank Interface Reference . . . . .	565
6.184IXMdataset_2d::IXFunits Interface Reference . . . . .	566
6.185IXMdataset_2d::IXFunits_dataset_2d Interface Reference . . . . .	567
6.186IXMrunfile::IXFunits_runfile Interface Reference . . . . .	569
6.187IXMdataset_1d::IXFunspike Interface Reference . . . . .	570
6.188IXMdataset_2d::IXFunspike Interface Reference . . . . .	571
6.189IXMwrapped_var::IXFunwrap_var Interface Reference . . . . .	572
6.190IXMwrapped_var::IXFunwrap_varAlloc Interface Reference . . . . .	574
6.191IXMwrapped_var::IXFunwrap_varPtr Interface Reference . . . . .	575
6.192IXMindex::IXFupper_index Interface Reference . . . . .	576
6.193IXMfermi_chopper::IXFvariance_fermi_chopper Interface Reference . . . . .	577
6.194IXMfermi_chopper::IXFvariance_odd_fermi_chopper Interface Reference . . . . .	578
6.195IXMshape::IXFvolume Interface Reference . . . . .	579
6.196IXMgeometry::IXFvolume Interface Reference . . . . .	580
6.197IXMwrapped_var::IXFwrap Interface Reference . . . . .	581
6.198IXMwrapped_var::IXFwrap_var Interface Reference . . . . .	582
6.199IXMapertura::IXTapertura Struct Reference . . . . .	584
6.200IXMattenuator::IXTattenuator Struct Reference . . . . .	586
6.201IXMbase::IXTbase Struct Reference . . . . .	588
6.202IXMbridge::IXTbridge Struct Reference . . . . .	589
6.203IXMchopper_instrument::IXTchopper_instrument Struct Reference . . . . .	590
6.204IXMcrystalanalyser::IXTcrystalanalyser Struct Reference . . . . .	591
6.205IXMdata::IXTdata Struct Reference . . . . .	593
6.206IXMdata_source::IXTdata_source Struct Reference . . . . .	595
6.207IXMdataset_1d::IXTdataset_1d Struct Reference . . . . .	596
6.208IXMdataset_2d::IXTdataset_2d Struct Reference . . . . .	598
6.209IXMdataset_3d::IXTdataset_3d Struct Reference . . . . .	600
6.210IXMdataset_4d::IXTdataset_4d Struct Reference . . . . .	602
6.211IXMdataset_nd::IXTdataset_nd Struct Reference . . . . .	605
6.212IXMdatum::IXTdatum Struct Reference . . . . .	607
6.213IXMdatum_array::IXTdatum_array Struct Reference . . . . .	608
6.214IXMdet_he3::IXTdet_he3 Struct Reference . . . . .	609
6.215IXMdet_solid::IXTdet_solid Struct Reference . . . . .	611
6.216IXMdetector::IXTdetector Struct Reference . . . . .	612

---

6.217IXMdiffraction_instrument::IXTdiffraction_instrument Struct Reference . . . . .	615
6.218IXMeffdet_index::IXTeffdet_index Struct Reference . . . . .	616
6.219IXMfermi_chopper::IXTfermi_chopper Struct Reference . . . . .	617
6.220IXMfileio::IXTfileio Struct Reference . . . . .	620
6.221IXMgeometry::IXTgeometry Struct Reference . . . . .	621
6.222IXMgroup::IXTgroup Struct Reference . . . . .	622
6.223IXMgroups::IXTgroups Struct Reference . . . . .	624
6.224IXMhistory::IXThistory Struct Reference . . . . .	625
6.225IXMinput_source::IXTinput_source Struct Reference . . . . .	626
6.226IXMinstrument::IXTinstrument Struct Reference . . . . .	628
6.227IXMisis_raw_file::IXTisis_raw_file Struct Reference . . . . .	630
6.228IXMlattice::IXTlattice Struct Reference . . . . .	632
6.229IXMmap::IXTmap Struct Reference . . . . .	634
6.230IXMmask::IXTmask Struct Reference . . . . .	636
6.231IXMmemory::IXTmemory_info Struct Reference . . . . .	637
6.232IXMmoderator::IXTmoderator Struct Reference . . . . .	638
6.233IXMmoments::IXTmoments Struct Reference . . . . .	640
6.234IXMoperation::IXTop_display Struct Reference . . . . .	643
6.235IXMoperation::IXTop_fileread Struct Reference . . . . .	644
6.236IXMoperation::IXTop_filewrite Struct Reference . . . . .	645
6.237IXMoperation::IXTop_get Struct Reference . . . . .	646
6.238IXMoperation::IXTop_init Struct Reference . . . . .	648
6.239IXMoperation::IXTop_matlabread Struct Reference . . . . .	649
6.240IXMoperation::IXTop_matlabwrite Struct Reference . . . . .	650
6.241IXMoperation::IXTop_set Struct Reference . . . . .	651
6.242IXMoperation::IXToperation Struct Reference . . . . .	653
6.243IXMoptions::IXToptions Struct Reference . . . . .	655
6.244IXMorientation::IXTorientation Struct Reference . . . . .	657
6.245IXMpeaks::IXTpeaks Struct Reference . . . . .	658
6.246IXMpointer_to_array::IXTpointer_to_array Struct Reference . . . . .	660
6.247IXMrunfile::IXTrunfile Struct Reference . . . . .	661
6.248IXMsample::IXTsample Struct Reference . . . . .	664
6.249IXMshape::IXTshape Struct Reference . . . . .	668
6.250IXMsource::IXTsource Struct Reference . . . . .	669
6.251IXMspectra::IXTspectra Struct Reference . . . . .	670
6.252IXMstatus::IXTstatus Struct Reference . . . . .	672

6.253	IXMstatus::IXTstatus_condition Struct Reference . . . . .	674
6.254	IXMsw_bridge::IXTsw_bridge Struct Reference . . . . .	675
6.255	IXMtestclass::IXTtestclass Struct Reference . . . . .	677
6.256	IXMtranslation::IXTtranslation Struct Reference . . . . .	680
6.257	IXMunits::IXTunits Struct Reference . . . . .	681
6.258	IXMuser::IXTuser Struct Reference . . . . .	682
6.259	IXMworkspace::IXTworkspace Struct Reference . . . . .	684
6.260	IXMwrapped_var::IXTwrapped_object Struct Reference . . . . .	686
6.261	IXMwrapped_var::IXTwrapped_var Struct Reference . . . . .	687
6.262	IXMws_bridge::IXTws_bridge Struct Reference . . . . .	690
6.263	NXmodule::NXgetattr Interface Reference . . . . .	692
6.264	NXmodule::NXgetdata Interface Reference . . . . .	694
6.265	NXmodule::NXgetslab Interface Reference . . . . .	696
6.266	NXmodule::NXhandle Struct Reference . . . . .	698
6.267	NXmodule::NXlink Struct Reference . . . . .	699
6.268	NXmodule::NXputattr Interface Reference . . . . .	700
6.269	NXmodule::NXputdata Interface Reference . . . . .	702
6.270	NXmodule::NXputslab Interface Reference . . . . .	704
6.271	NXUmodule::NXUreaddata Interface Reference . . . . .	706
6.272	NXUmodule::NXUwritedata Interface Reference . . . . .	708
6.274	IXMtranslation::operator Interface Reference . . . . .	711
6.274	IXMtranslation::operator Interface Reference . . . . .	711
6.275	IXMorientation::operator Interface Reference . . . . .	712
6.276	vax_double Struct Reference . . . . .	713
6.277	vax_single Struct Reference . . . . .	714
<b>7</b>	<b>LIBISIS File Documentation</b>	<b>715</b>
7.1	bindings/f90/bindings.f90 File Reference . . . . .	715
7.2	bindings/f90/bindings_utils.c File Reference . . . . .	722
7.3	libclasses/ endian_convert.c File Reference . . . . .	723
7.4	libclasses/ endian_convert.h File Reference . . . . .	727
7.5	libclasses/IXMaperture.f90 File Reference . . . . .	730
7.6	libclasses/IXMattenuator.f90 File Reference . . . . .	731
7.7	libclasses/IXMbase.f90 File Reference . . . . .	732
7.8	libclasses/IXMbridge.f90 File Reference . . . . .	734
7.9	libclasses/IXMchopper_instrument.f90 File Reference . . . . .	736
7.10	libclasses/IXMcrystalanalyser.f90 File Reference . . . . .	738

---

7.11	libclasses/IXMdata.f90 File Reference . . . . .	739
7.12	libclasses/IXMdata_source.f90 File Reference . . . . .	741
7.13	libclasses/IXMdataset_1d.f90 File Reference . . . . .	742
7.14	libclasses/IXMdataset_2d.f90 File Reference . . . . .	746
7.15	libclasses/IXMdataset_3d.f90 File Reference . . . . .	752
7.16	libclasses/IXMdataset_4d.f90 File Reference . . . . .	753
7.17	libclasses/IXMdataset_common.f90 File Reference . . . . .	754
7.18	libclasses/IXMdataset_nd.f90 File Reference . . . . .	755
7.19	libclasses/IXMdatum.f90 File Reference . . . . .	756
7.20	libclasses/IXMdatum_array.f90 File Reference . . . . .	758
7.21	libclasses/IXMdet_he3.f90 File Reference . . . . .	762
7.22	libclasses/IXMdet_solid.f90 File Reference . . . . .	763
7.23	libclasses/IXMdetector.f90 File Reference . . . . .	764
7.24	libclasses/IXMdiffraction_instrument.f90 File Reference . . . . .	766
7.25	libclasses/IXMeffdet_index.f90 File Reference . . . . .	768
7.26	libclasses/IXMfermi_chopper.f90 File Reference . . . . .	770
7.27	libclasses/IXMfileio.f90 File Reference . . . . .	772
7.28	libclasses/IXMgeometry.f90 File Reference . . . . .	775
7.29	libclasses/IXMgroup.f90 File Reference . . . . .	777
7.30	libclasses/IXMgroups.f90 File Reference . . . . .	779
7.31	libclasses/IXMhistory.f90 File Reference . . . . .	781
7.32	libclasses/IXMinput_source.f90 File Reference . . . . .	782
7.33	libclasses/IXMinstrument.f90 File Reference . . . . .	784
7.34	libclasses/IXMisis_raw_file.f90 File Reference . . . . .	786
7.35	libclasses/IXMlattice.f90 File Reference . . . . .	796
7.36	libclasses/IXMmap.f90 File Reference . . . . .	797
7.37	libclasses/IXMmask.f90 File Reference . . . . .	799
7.38	libclasses/IXMmoderator.f90 File Reference . . . . .	801
7.39	libclasses/IXMmoments.f90 File Reference . . . . .	803
7.40	libclasses/IXMoperation.f90 File Reference . . . . .	804
7.41	libclasses/IXMoperation_interfaces.f90 File Reference . . . . .	812
7.42	libclasses/IXMoptions.f90 File Reference . . . . .	816
7.43	libclasses/IXMorientation.f90 File Reference . . . . .	817
7.44	libclasses/IXMpeaks.f90 File Reference . . . . .	819
7.45	libclasses/IXMrunfile.f90 File Reference . . . . .	821
7.46	libclasses/IXMsample.f90 File Reference . . . . .	823

---

7.47 libclasses/IXMshape.f90 File Reference . . . . .	825
7.48 libclasses/IXMsource.f90 File Reference . . . . .	827
7.49 libclasses/IXMspectra.f90 File Reference . . . . .	828
7.50 libclasses/IXMsw_bridge.f90 File Reference . . . . .	830
7.51 libclasses/IXMtestclass.f90 File Reference . . . . .	832
7.52 libclasses/IXMtranslation.f90 File Reference . . . . .	834
7.53 libclasses/IXMunits.f90 File Reference . . . . .	836
7.54 libclasses/IXMuser.f90 File Reference . . . . .	837
7.55 libclasses/IXMworkspace.f90 File Reference . . . . .	838
7.56 libclasses/IXMwrappedvar.f90 File Reference . . . . .	840
7.57 libclasses/IXMws_bridge.f90 File Reference . . . . .	843
7.58 libclasses/NXmodule.f90 File Reference . . . . .	845
7.59 libclasses/NXUmodule.f90 File Reference . . . . .	848
7.60 libcore/IXMarraymanips.f90 File Reference . . . . .	851
7.61 libcore/IXMderivative.f90 File Reference . . . . .	853
7.62 libcore/IXMefficiency.f90 File Reference . . . . .	854
7.63 libcore/IXMerrorcodes.f90 File Reference . . . . .	855
7.64 libcore/IXMindex.f90 File Reference . . . . .	856
7.65 libcore/IXMintegrate.f90 File Reference . . . . .	857
7.66 libcore/IXMio.f90 File Reference . . . . .	858
7.67 libcore/IXMlibcore.f90 File Reference . . . . .	859
7.68 libcore/IXMmaths_basis.f90 File Reference . . . . .	860
7.69 libcore/IXMmaths_geometry.f90 File Reference . . . . .	861
7.70 libcore/IXMmaths_projection.f90 File Reference . . . . .	862
7.71 libcore/IXMmaths_utils.f90 File Reference . . . . .	863
7.72 libcore/IXMmemory.f90 File Reference . . . . .	864
7.73 libcore/IXMmoments_utils.f90 File Reference . . . . .	868
7.74 libcore/IXMneutron_constants.f90 File Reference . . . . .	869
7.75 libcore/IXMneutron_units.f90 File Reference . . . . .	870
7.76 libcore/IXMphysical_constants.f90 File Reference . . . . .	872
7.77 libcore/IXMpointer_to_array.f90 File Reference . . . . .	873
7.78 libcore/IXMrebin.f90 File Reference . . . . .	874
7.79 libcore/IXMrebunch.f90 File Reference . . . . .	875
7.80 libcore/IXMregroup.f90 File Reference . . . . .	876
7.81 libcore/IXMshift.f90 File Reference . . . . .	877
7.82 libcore/IXMsort.f90 File Reference . . . . .	878

7.83 libcore/IXMstatus.f90 File Reference . . . . .	879
7.84 libcore/IXMtools.f90 File Reference . . . . .	880
7.85 libcore/IXMtype_definitions.f90 File Reference . . . . .	882
7.86 libcore/IXMunits_utils.f90 File Reference . . . . .	884
7.87 libcore/IXMunspike.f90 File Reference . . . . .	885
7.88 libcore/libcore.c File Reference . . . . .	886
7.89 libcore/memory_utils.f90 File Reference . . . . .	888



# Chapter 1

## LIBISIS Index

### 1.1 Introduction

In the text below

- Namespaces are modules
- Classes are derived data types and interfaces
- Module functions are written as `module::function`
- derived data types are written as `module::type`
- Interface functions are `module::interface::function`



# Chapter 2

## LIBISIS Namespace Index

### 2.1 LIBISIS Namespace List

Here is a list of all namespaces with brief descriptions:

IXMaperture	17
IXMarraymanips	20
IXMattenuator	22
IXMbase	24
IXMbridge	30
IXMchopper_instrument	33
IXMcrystalanalyser	36
IXMdata	37
IXMdata_source	45
IXMdataset_1d	49
IXMdataset_2d	59
IXMdataset_3d	77
IXMdataset_4d	79
IXMdataset_common	81
IXMdataset_nd	82
IXMdatum	83
IXMdatum_array	86
IXMderivative	89
IXMdet_he3	90
IXMdet_solid	92
IXMdetector	94
IXMdiffraction_instrument	101
IXMeffdet_index	104
IXMefficiency	107
IXMerrorcodes	108
IXMfermi_chopper	110
IXMfileio	116
IXMgeometry	123
IXMgroup	128
IXMgroups	130
IXMhistory	136
IXMindex	139
IXMinput_source	140

IXMinstrument	143
IXMintegrate	148
IXMio	150
IXMisis_raw_file	151
IXMlattice	160
IXMlibcore (Libcore module)	162
IXMmap	164
IXMmask	169
IXMmaths_basis	173
IXMmaths_geometry	175
IXMmaths_projection	176
IXMmaths_utils	178
IXMmemory	179
IXMmoderator	181
IXMmoments	184
IXMmoments_utils	186
IXMneutron_constants	187
IXMneutron_units	189
IXMoperation	197
IXMoperation_interfaces	209
IXMoptions	210
IXMorientation	212
IXMpeaks	218
IXMphysical_constants	221
IXMpointer_to_array	223
IXMrebin	224
IXMrebunch	226
IXMregroup	231
IXMrunfile	233
IXMsample	246
IXMshape	250
IXMshift	261
IXMsort	262
IXMsource	263
IXMspectra	265
IXMstatus	269
IXMsw_bridge	274
IXMtestclass	277
IXMtools	281
IXMtranslation	291
IXMtype_definitions	295
IXMunits	301
IXMunits_utils	304
IXMunspike	308
IXMuser	309
IXMworkspace	311
IXMwrapped_var	314
IXMws_bridge	319
m_mrgrnk	323
m_refsr	324
m_unirnk	326
m_valmed	328
NE	329
NXmodule	330

---

NXUmodule . . . . .	348
---------------------	-----



# Chapter 3

## LIBISIS Class Index

### 3.1 LIBISIS Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

<code>IXMwrapped_var::base_object</code>	377
<code>NXUmodule::data_type</code>	378
<code>ieee_double</code>	379
<code>ieee_single</code>	380
<code>IXMstatus::interface</code>	382
<code>IXMstatus::interface</code>	382
<code>IXMdataset_1d::interface</code>	383
<code>IXMfileio::IXBfileRead</code>	384
<code>IXMfileio::IXBfileReadAlloc</code>	386
<code>IXMfileio::IXBfileReadPtr</code>	387
<code>IXMfileio::IXBfileWrite</code>	388
<code>IXMoperation_interfaces::IXBgetFromBinding</code>	390
<code>IXMoperation_interfaces::IXBgetFromBindingAlloc</code>	391
<code>IXMstatus::IXFadd_status</code>	392
<code>IXMarraymanips::IXFarrayCheck</code>	393
<code>IXMarraymanips::IXFarrayCos</code>	394
<code>IXMarraymanips::IXFarrayCosh</code>	395
<code>IXMarraymanips::IXFarrayDivide</code>	396
<code>IXMarraymanips::IXFarrayDivideAD</code>	397
<code>IXMarraymanips::IXFarrayDivideDA</code>	398
<code>IXMarraymanips::IXFarrayExp</code>	399
<code>IXMarraymanips::IXFarrayLog</code>	400
<code>IXMarraymanips::IXFarrayMinus</code>	401
<code>IXMarraymanips::IXFarrayMinusAD</code>	402
<code>IXMarraymanips::IXFarrayMinusDA</code>	403
<code>IXMarraymanips::IXFarrayPlus</code>	404
<code>IXMarraymanips::IXFarrayPlusAD</code>	405
<code>IXMarraymanips::IXFarrayPlusDA</code>	406
<code>IXMarraymanips::IXFarrayPower</code>	407
<code>IXMarraymanips::IXFarraySin</code>	408
<code>IXMarraymanips::IXFarraySinh</code>	409
<code>IXMarraymanips::IXFarrayTan</code>	410
<code>IXMarraymanips::IXFarrayTanh</code>	411

IXMarraymanips::IXFarrayTimes	412
IXMarraymanips::IXFarrayTimesAD	413
IXMarraymanips::IXFarrayTimesDA	414
IXMdata_source::IXFcheck	415
IXMhistory::IXFcheck	416
IXMoperation::IXFcheck	417
IXMstatus::IXFcheck_status	418
IXMstatus::IXFclear_status	419
IXMdatum_array::IXFcos	420
IXMdataset_1d::IXFcos	421
IXMmaths_basis::IXFcos	422
IXMdataset_2d::IXFcos	423
IXMdatum::IXFcos	424
IXMdatum_array::IXFcosh	425
IXMdataset_1d::IXFcosh	426
IXMdataset_2d::IXFcosh	427
IXMdatum::IXFcosh	428
IXMorientation::IXFcreate	429
IXMtestclass::IXFcreate	430
IXMmaths_basis::IXFcross	431
IXMtranslation::IXFcross	432
IXMoperation::IXFdisplay	433
IXMdatum_array::IXFdivide	435
IXMdataset_1d::IXFdivide	436
IXMdataset_2d::IXFdivide	437
IXMdatum::IXFdivide	438
IXMdataset_1d::IXFdivide_dataset_1d	439
IXMdataset_2d::IXFdivide_dataset_2d	440
IXMdatum::IXFdivide_Datum	441
IXMdatum_array::IXFdivide_Datum_array	442
IXMdataset_2d::IXFdivide_X	443
IXMdataset_2d::IXFdivide_X_dataset_2d	444
IXMdataset_2d::IXFdivide_Y	445
IXMdataset_2d::IXFdivide_Y_dataset_2d	446
IXMmaths_basis::IXFdot	447
IXMtranslation::IXFdot	448
IXMdatum_array::IXFexp	449
IXMdataset_1d::IXFexp	450
IXMdataset_2d::IXFexp	451
IXMdatum::IXFexp	452
IXMfileio::IXFfile_read	453
IXMdata_source::IXFfile_read	454
IXMhistory::IXFfile_read	455
IXMfileio::IXFfile_type	456
IXMfileio::IXFfile_write	457
IXMdata_source::IXFfile_write	458
IXMhistory::IXFfile_write	459
IXMdiffracton_instrument::IXFget_emode	460
IXMchopper_instrument::IXFget_emode	461
IXMbase::IXFget_integer_array	462
IXMdiffracton_instrument::IXFget_ptr	463
IXMchopper_instrument::IXFget_ptr	464
IXMisis_raw_file::IXFget_raw	465
IXMbase::IXFget_real_array	468



IXMdataset_2d::IXFintegrate_x_dataset_2d	469
IXMgroups::IXFis_member_groups	470
IXMdatum_array::IXFlog	471
IXMdataset_1d::IXFlog	472
IXMdataset_2d::IXFlog	473
IXMdatum::IXFlog	474
IXMindex::IXFlower_index	475
IXMgroups::IXFmember_list_groups	476
IXMdataset_1d::IXFminus	477
IXMdataset_2d::IXFminus	478
IXMdatum::IXFminus	479
IXMdatum_array::IXFminus	480
IXMdataset_1d::IXFminus_dataset_1d	481
IXMdataset_2d::IXFminus_dataset_2d	482
IXMdatum::IXFminus_Datum	483
IXMdatum_array::IXFminus_datum_array	484
IXMdataset_2d::IXFminus_X	485
IXMdataset_2d::IXFminus_X_dataset_2d	486
IXMdataset_2d::IXFminus_Y	487
IXMdataset_2d::IXFminus_Y_dataset_2d	488
IXMmaths_basis::IXFnorm	489
IXMtranslation::IXFnorm	490
IXMoperation::IXFoperation_run	493
IXMoperation::IXFoperation_run	493
IXMoperation::IXFoperation_run	493
IXMoperation::IXFoperation_run_alloc	494
IXMoperation::IXFoperation_run_ptr	495
IXMoperation::IXFoperationMake	496
IXMoperation::IXFoperationPrint	498
IXMgroups::IXFparent_groups	499
IXMgroups::IXFparent_id_groups	500
IXMgroups::IXFparent_list_groups	501
IXMdataset_1d::IXFplus	502
IXMdataset_2d::IXFplus	503
IXMdatum::IXFplus	504
IXMdatum_array::IXFplus	505
IXMdataset_1d::IXFplus_dataset_1d	506
IXMdataset_2d::IXFplus_dataset_2d	507
IXMdatum::IXFplus_Datum	508
IXMdatum_array::IXFplus_Datum_array	509
IXMdataset_2d::IXFplus_X	510
IXMdataset_2d::IXFplus_X_dataset_2d	511
IXMdataset_2d::IXFplus_Y	512
IXMdataset_2d::IXFplus_Y_dataset_2d	513
IXMdata::IXFpopulate_data	514
IXMspectra::IXFpopulate_spectra	515
IXMdatum_array::IXFpower	516
IXMdataset_1d::IXFpower	517
IXMdataset_2d::IXFpower	518
IXMdatum::IXFpower	519
IXMdataset_1d::IXFpower_dataset_1d	520
IXMdataset_2d::IXFpower_dataset_2d	521
IXMdatum::IXFpower_Datum	522
IXMdatum_array::IXFpower_Datum_array	523

m_mrgnrnk::IXFrank	524
IXMgroups::IXFremove_groups	525
IXMstatus::IXFreport_status	526
IXMbase::IXFset_integer_array	527
IXMbase::IXFset_real_array	528
IXMorientation::IXFsetgen_orientation	529
IXMdatum_array::IXFsin	530
IXMdataset_1d::IXFsin	531
IXMdataset_2d::IXFsin	532
IXMdatum::IXFsin	533
IXMdatum_array::IXFsinh	534
IXMdataset_1d::IXFsinh	535
IXMdataset_2d::IXFsinh	536
IXMdatum::IXFsinh	537
IXMinput_source::IXFsize	538
IXMisis_raw_file::IXFsize_raw	539
IXMshape::IXFsolid_angle	540
IXMgeometry::IXFsolid_angle	541
m_refsrnk::IXFsort	542
IXMdataset_1d::IXFtan	543
IXMdataset_2d::IXFtan	544
IXMdatum_array::IXFtan	545
IXMdatum::IXFtan	546
IXMdatum_array::IXFtanh	547
IXMdataset_1d::IXFtanh	548
IXMdataset_2d::IXFtanh	549
IXMdatum::IXFtanh	550
IXMdataset_1d::IXFtimes	551
IXMdataset_2d::IXFtimes	552
IXMdatum::IXFtimes	553
IXMdatum_array::IXFtimes	554
IXMdataset_1d::IXFtimes_dataset_1d	555
IXMdataset_2d::IXFtimes_dataset_2d	556
IXMdatum::IXFtimes_Datum	557
IXMdatum_array::IXFtimes_Datum_array	558
IXMdataset_2d::IXFtimes_X	559
IXMdataset_2d::IXFtimes_X_dataset_2d	560
IXMdataset_2d::IXFtimes_Y	561
IXMdataset_2d::IXFtimes_Y_dataset_2d	562
IXMfermi_chopper::IXFtransmission_fermi_chopper	563
IXMfermi_chopper::IXFtransmission_odd_fermi_chopper	564
m_unirnk::IXFunique_rank	565
IXMdataset_2d::IXFunits	566
IXMdataset_2d::IXFunits_dataset_2d	567
IXMrunfile::IXFunits_runfile	569
IXMdataset_1d::IXFunspike	570
IXMdataset_2d::IXFunspike	571
IXMwrapped_var::IXFunwrap_var	572
IXMwrapped_var::IXFunwrap_varAlloc	574
IXMwrapped_var::IXFunwrap_varPtr	575
IXMindex::IXFupper_index	576
IXMfermi_chopper::IXFvariance_fermi_chopper	577
IXMfermi_chopper::IXFvariance_odd_fermi_chopper	578
IXMshape::IXFvolume	579

IXMgeometry::IXFvolume	580
IXMwrapped_var::IXFwrap	581
IXMwrapped_var::IXFwrap_var	582
IXMaperture::IXTaperture	584
IXMattenuator::IXTattenuator	586
IXMbase::IXTbase	588
IXMbridge::IXTbridge	589
IXMchopper_instrument::IXTchopper_instrument	590
IXMcrystalanalyser::IXTcrystalanalyser	591
IXMdata::IXTdata	593
IXMdata_source::IXTdata_source	595
IXMdataset_1d::IXTdataset_1d	596
IXMdataset_2d::IXTdataset_2d	598
IXMdataset_3d::IXTdataset_3d	600
IXMdataset_4d::IXTdataset_4d	602
IXMdataset_nd::IXTdataset_nd	605
IXMdatum::IXTdatum	607
IXMdatum_array::IXTdatum_array	608
IXMdet_he3::IXTdet_he3	609
IXMdet_solid::IXTdet_solid	611
IXMdetector::IXTdetector	612
IXMdiffraction_instrument::IXTdiffraction_instrument	615
IXMeffdet_index::IXTeffdet_index	616
IXMfermi_chopper::IXTfermi_chopper	617
IXMfileio::IXTfileio	620
IXMgeometry::IXTgeometry	621
IXMgroup::IXTgroup	622
IXMgroups::IXTgroups	624
IXMhistory::IXThistory	625
IXMinput_source::IXTinput_source	626
IXMinstrument::IXTinstrument	628
IXMisis_raw_file::IXTisis_raw_file	630
IXMlattice::IXTlattice	632
IXMmap::IXTmap	634
IXMmask::IXTmask	636
IXMmemory::IXTmemory_info	637
IXMmoderator::IXTmoderator	638
IXMmoments::IXTmoments	640
IXMoperation::IXTop_display	643
IXMoperation::IXTop_fileread	644
IXMoperation::IXTop_filewrite	645
IXMoperation::IXTop_get	646
IXMoperation::IXTop_init	648
IXMoperation::IXTop_matlabread	649
IXMoperation::IXTop_matlabwrite	650
IXMoperation::IXTop_set	651
IXMoperation::IXToperation	653
IXMoptions::IXToptions	655
IXMorientation::IXTorientation	657
IXMpeaks::IXTpeaks	658
IXMpointer_to_array::IXTpointer_to_array	660
IXMrunfile::IXTrunfile	661
IXMsample::IXTsample	664
IXMshape::IXTshape	668

IXMsource::IXTsource	669
IXMspectra::IXTspectra	670
IXMstatus::IXTstatus	672
IXMstatus::IXTstatus_condition	674
IXMsw_bridge::IXTsw_bridge	675
IXMtestclass::IXTtestclass	677
IXMtranslation::IXTtranslation	680
IXMunits::IXTunits	681
IXMuser::IXTuser	682
IXMworkspace::IXTworkspace	684
IXMwrapped_var::IXTwrapped_object	686
IXMwrapped_var::IXTwrapped_var	687
IXMws_bridge::IXTws_bridge	690
NXmodule::NXgetattr	692
NXmodule::NXgetdata	694
NXmodule::NXgetslab	696
NXmodule::NXhandle	698
NXmodule::NXlink	699
NXmodule::NXputattr	700
NXmodule::NXputdata	702
NXmodule::NXputslab	704
NXUmodule::NXUreaddata	706
NXUmodule::NXUwritedata	708
IXMtranslation::operator	711
IXMtranslation::operator	711
IXMorientation::operator	712
vax_double	713
vax_single	714

# Chapter 4

## LIBISIS File Index

### 4.1 LIBISIS File List

Here is a list of all files with brief descriptions:

bindings/f90/bindings.f90 . . . . .	715
bindings/f90/bindings_utils.c . . . . .	722
libclasses/Endian_convert.c . . . . .	723
libclasses/Endian_convert.h . . . . .	727
libclasses/IXMaperture.f90 . . . . .	730
libclasses/IXMattenuator.f90 . . . . .	731
libclasses/IXMbase.f90 . . . . .	732
libclasses/IXMbridge.f90 . . . . .	734
libclasses/IXMchopper_instrument.f90 . . . . .	736
libclasses/IXMcrystalanalyser.f90 . . . . .	738
libclasses/IXMdata.f90 . . . . .	739
libclasses/IXMdata_source.f90 . . . . .	741
libclasses/IXMdataset_1d.f90 . . . . .	742
libclasses/IXMdataset_2d.f90 . . . . .	746
libclasses/IXMdataset_3d.f90 . . . . .	752
libclasses/IXMdataset_4d.f90 . . . . .	753
libclasses/IXMdataset_common.f90 . . . . .	754
libclasses/IXMdataset_nd.f90 . . . . .	755
libclasses/IXMdatum.f90 . . . . .	756
libclasses/IXMdatum_array.f90 . . . . .	758
libclasses/IXMdet_he3.f90 . . . . .	762
libclasses/IXMdet_solid.f90 . . . . .	763
libclasses/IXMdetector.f90 . . . . .	764
libclasses/IXMdiffraction_instrument.f90 . . . . .	766
libclasses/IXMeffdet_index.f90 . . . . .	768
libclasses/IXMfermi_chopper.f90 . . . . .	770
libclasses/IXMfileio.f90 . . . . .	772
libclasses/IXMgeometry.f90 . . . . .	775
libclasses/IXMgroup.f90 . . . . .	777
libclasses/IXMgroups.f90 . . . . .	779
libclasses/IXMhistory.f90 . . . . .	781
libclasses/IXMinput_source.f90 . . . . .	782
libclasses/IXMinstrument.f90 . . . . .	784

libclasses/IXMisis_raw_file.f90	786
libclasses/IXMlattice.f90	796
libclasses/IXMmap.f90	797
libclasses/IXMmask.f90	799
libclasses/IXMmoderator.f90	801
libclasses/IXMmoments.f90	803
libclasses/IXMoperation.f90	804
libclasses/IXMoperation_interfaces.f90	812
libclasses/IXMoptions.f90	816
libclasses/IXMorientation.f90	817
libclasses/IXMpeaks.f90	819
libclasses/IXMrunfile.f90	821
libclasses/IXMsample.f90	823
libclasses/IXMshape.f90	825
libclasses/IXMsource.f90	827
libclasses/IXMspectra.f90	828
libclasses/IXMsw_bridge.f90	830
libclasses/IXMtestclass.f90	832
libclasses/IXMtranslation.f90	834
libclasses/IXMunits.f90	836
libclasses/IXMuser.f90	837
libclasses/IXMworkspace.f90	838
libclasses/IXMwrappedvar.f90	840
libclasses/IXMws_bridge.f90	843
libclasses/NXmodule.f90	845
libclasses/NXUmodule.f90	848
libcore/IXMarraymanips.f90	851
libcore/IXMderivative.f90	853
libcore/IXMefficiency.f90	854
libcore/IXMerrorcodes.f90	855
libcore/IXMindex.f90	856
libcore/IXMintegrate.f90	857
libcore/IXMio.f90	858
libcore/IXMlibcore.f90	859
libcore/IXMmaths_basis.f90	860
libcore/IXMmaths_geometry.f90	861
libcore/IXMmaths_projection.f90	862
libcore/IXMmaths_utils.f90	863
libcore/IXMmemory.f90	864
libcore/IXMmoments_utils.f90	868
libcore/IXMneutron_constants.f90	869
libcore/IXMneutron_units.f90	870
libcore/IXMphysical_constants.f90	872
libcore/IXMpointer_to_array.f90	873
libcore/IXMrebin.f90	874
libcore/IXMrebunch.f90	875
libcore/IXMregroup.f90	876
libcore/IXMshift.f90	877
libcore/IXMsort.f90	878
libcore/IXMstatus.f90	879
libcore/IXMtools.f90	880
libcore/IXMtype_definitions.f90	882
libcore/IXMunits_utils.f90	884
libcore/IXMunspike.f90	885

---

libcore/ <b>libcore.c</b> . . . . .	886
libcore/ <b>memory_utils.f90</b> . . . . .	888





# Chapter 5

## LIBISIS Namespace Documentation

### 5.1 IXMaperture Namespace Reference

#### Classes

- struct `IXTaperture`

#### Functions

- subroutine `IXFdestroy_aperture` (`arg`, `status`)
- subroutine `IXFcheck_aperture` (`aperture`, `status`)
- subroutine `IXFoperation_run_aperture` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcreate_aperture` (`aperture`, `name`, `distance`, `shape`, `horiz_posn`, `vert_posn`, `width`, `height`, `radius`, `status`)
- subroutine `IXFset_aperture` (`aperture`, `status`, `name`, `distance`, `shape`, `horiz_posn`, `vert_posn`, `width`, `height`, `radius`, `ref`)
- subroutine `IXFget_aperture` (`aperture`, `status`, `name`, `distance`, `shape`, `horiz_posn`, `vert_posn`, `width`, `height`, `radius`, `wout`)

#### 5.1.1 Function Documentation

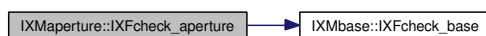
- 5.1.1.1 subroutine `IXMaperture::IXFcheck_aperture` (`type(IXTaperture)` *aperture*, `type(IXTstatus)` *status*)

Definition at line 62 of file `IXMaperture.f90`.

References `IXMbase::IXFcheck_base()`.

Referenced by `IXFset_aperture()`.

Here is the call graph for this function:



**5.1.1.2 subroutine IXMaperture::IXFcreate\_aperture**  
 (type(IXTaperture),intent(out) *aperture*, character(len=\*),intent(in) *name*, real(dp),intent(in) *distance*, character(len=\*),intent(in) *shape*, real(dp),intent(in) *horiz\_posn*, real(dp),intent(in) *vert\_posn*, real(dp),intent(in) *width*, real(dp),intent(in) *height*, real(dp),intent(in) *radius*, type(IXTstatus) *status*)

Definition at line 103 of file IXMaperture.f90.

References IXFset\_aperture().

Here is the call graph for this function:



**5.1.1.3 subroutine IXMaperture::IXFdestroy\_aperture** (type(IXTaperture) *arg*, type(IXTstatus) *status*)

Definition at line 50 of file IXMaperture.f90.

**5.1.1.4 subroutine IXMaperture::IXFget\_aperture**  
 (type(IXTaperture),intent(inout) *aperture*, type(IXTstatus),intent(inout) *status*, character(len=\*),intent(out),optional *name*, real(dp),intent(out),optional *distance*, character(len=\*),intent(out),optional *shape*, real(dp),intent(out),optional *horiz\_posn*, real(dp),intent(out),optional *vert\_posn*, real(dp),intent(out),optional *width*, real(dp),intent(out),optional *height*, real(dp),intent(out),optional *radius*, type(IXTaperture),intent(out),optional *wout*)

Definition at line 182 of file IXMaperture.f90.

**5.1.1.5 subroutine IXMaperture::IXFoperation\_run\_aperture**  
 (type(IXToperation) *op*, character(len=\*) *field*, type(IXTaperture) *arg*, type(IXTstatus) *status*)

Definition at line 75 of file IXMaperture.f90.

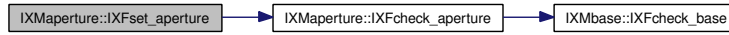
**5.1.1.6 subroutine IXMaperture::IXFset\_aperture**  
 (type(IXTaperture),intent(inout) *aperture*, type(IXTstatus),intent(inout) *status*, character(len=\*),intent(in),optional *name*, real(dp),intent(in),optional *distance*, character(len=\*),intent(in),optional *shape*, real(dp),intent(in),optional *horiz\_posn*, real(dp),intent(in),optional *vert\_posn*, real(dp),intent(in),optional *width*, real(dp),intent(in),optional *height*, real(dp),intent(in),optional *radius*, type(IXTaperture),intent(in),optional *ref*)

Definition at line 130 of file IXMaperture.f90.

References IXFcheck\_aperture().

Referenced by IXFcreate\_aperture().

Here is the call graph for this function:



## 5.2 IXMarraymanips Namespace Reference

### Classes

- interface `IXFarrayCheck`
- interface `IXFarrayPlus`
- interface `IXFarrayTimes`
- interface `IXFarrayMinus`
- interface `IXFarrayDivide`
- interface `IXFarrayPower`
- interface `IXFarrayExp`
- interface `IXFarrayLog`
- interface `IXFarraySin`
- interface `IXFarrayCos`
- interface `IXFarrayTan`
- interface `IXFarraySinh`
- interface `IXFarrayCosh`
- interface `IXFarrayTanh`
- interface `IXFarrayPlusDA`
- interface `IXFarrayPlusAD`
- interface `IXFarrayTimesDA`
- interface `IXFarrayTimesAD`
- interface `IXFarrayMinusDA`
- interface `IXFarrayMinusAD`
- interface `IXFarrayDivideDA`
- interface `IXFarrayDivideAD`

### Functions

- subroutine `IXFcreatebinfac_D1` (`s`, `e`, `x`, `mx_u`, `mx_l`, `binfacV_D1`, `binfacE_D1`)
- subroutine `IXFcreatePfac_D1` (`s`, `e`, `x`, `mx_u`, `mx_l`, `PfacV_D1`, `PfacE_D1`)
- subroutine `IXFcreatebinfac_D2` (`s`, `e`, `y`, `my_u`, `my_l`, `binfacV_D2`, `binfacE_D2`)
- subroutine `IXFcreatePfac_D2` (`s`, `e`, `y`, `my_u`, `my_l`, `PfacV_D2`, `PfacE_D2`)

### 5.2.1 Function Documentation

- 5.2.1.1 subroutine `IXMarraymanips::IXFcreatebinfac_D1`  
`(real(dp),dimension(:,:),intent(in) s, real(dp),dimension(:,:),intent(in) e, real(dp),dimension(:) ,intent(in) x, integer(i4b) mx_u, integer(i4b) mx_l, real(dp),dimension(:,:),intent(out) binfacV_D1, real(dp),dimension(:,:),intent(out) binfacE_D1)`

Definition at line 415 of file `IXMarraymanips.f90`.

Referenced by `IXMintegrate::IXFintegrate_2d_hist()`.

**5.2.1.2 subroutine IXMarraymanips::IXFcreatebinfac\_D2**  
(real(dp),dimension(:,:),intent(in) *s*, real(dp),dimension(:,:) ,intent(in) *e*,  
real(dp),dimension(:) ,intent(in) *y*, integer(i4b) *my\_u*, integer(i4b) *my\_l*,  
real(dp),dimension(:,:),intent(out) *binfacV\_D2*, real(dp),dimension(:,:) ,  
intent(out) *binfacE\_D2*)

Definition at line 455 of file IXMarraymanips.f90.

Referenced by IXMintegrate::IXFintegrate\_2d\_hist().

**5.2.1.3 subroutine IXMarraymanips::IXFcreatePfac\_D1**  
(real(dp),dimension(:,:),intent(in) *s*, real(dp),dimension(:,:),intent(in)  
*e*, real(dp),dimension(:) ,intent(in) *x*, integer(i4b) *mx\_u*,  
integer(i4b) *mx\_l*, real(dp),dimension(:,:),intent(out) *PfacV\_D1*,  
real(dp),dimension(:,:),intent(out) *PfacE\_D1*)

Definition at line 434 of file IXMarraymanips.f90.

Referenced by IXMintegrate::IXFintegrate\_2d\_hist().

**5.2.1.4 subroutine IXMarraymanips::IXFcreatePfac\_D2**  
(real(dp),dimension(:,:),intent(in) *s*, real(dp),dimension(:,:) ,intent(in) *e*,  
real(dp),dimension(:) ,intent(in) *y*, integer(i4b) *my\_u*, integer(i4b) *my\_l*,  
real(dp),dimension(:,:),intent(out) *PfacV\_D2*, real(dp),dimension(:,:) ,  
intent(out) *PfacE\_D2*)

Definition at line 477 of file IXMarraymanips.f90.

Referenced by IXMintegrate::IXFintegrate\_2d\_hist().

## 5.3 IXMattenuator Namespace Reference

### Classes

- struct **IXTattenuator**

### Functions

- subroutine **IXFdestroy\_attenuator** (arg, status)
- subroutine **IXFcheck\_attenuator** (attenuator, status)
- subroutine **IXFoperation\_run\_attenuator** (op, field, arg, status)
- subroutine **IXFcreate\_attenuator** (attenuator, name, distance, material, thickness, attenuation, status)
- subroutine **IXFset\_attenuator** (attenuator, status, name, distance, material, thickness, attenuation, ref)
- subroutine **IXFget\_attenuator** (attenuator, status, name, distance, material, thickness, attenuation, wout)

### 5.3.1 Function Documentation

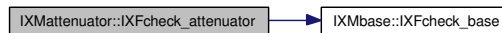
#### 5.3.1.1 subroutine IXMattenuator::IXFcheck\_attenuator (type(IXTattenuator) *attenuator*, type(IXTstatus) *status*)

Definition at line 64 of file IXMattenuator.f90.

References IXMbase::IXFcheck\_base().

Referenced by IXFset\_attenuator().

Here is the call graph for this function:

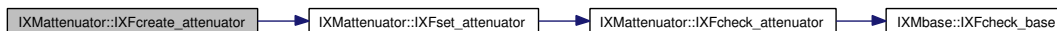


#### 5.3.1.2 subroutine IXMattenuator::IXFcreate\_attenuator (type(IXTattenuator),intent(out) *attenuator*, character(len=\*)*,intent(in) name*, real(dp),intent(in) *distance*, character(len=\*)*,intent(in) material*, real(dp),intent(in) *thickness*, type(IXTdataset\_1d),intent(in) *attenuation*, type(IXTstatus),intent(inout) *status*)

Definition at line 103 of file IXMattenuator.f90.

References IXFset\_attenuator().

Here is the call graph for this function:



**5.3.1.3** subroutine IXMattenuator::IXFdestroy\_attenuator (type(IXTattenuator) *arg*, type(IXTstatus) *status*)

Definition at line 48 of file IXMattenuator.f90.

**5.3.1.4** subroutine IXMattenuator::IXFget\_attenuator (type(IXTattenuator),intent(inout) *attenuator*, type(IXTstatus),intent(inout) *status*, character(len=\*),intent(out),optional *name*, real(dp),intent(out),optional *distance*, character(len=\*),intent(out),optional *material*, real(dp),intent(out),optional *thickness*, type(IXTdataset\_1d),intent(out),optional *attenuation*, type(IXTattenuator),intent(out),optional *wout*)

Definition at line 182 of file IXMattenuator.f90.

**5.3.1.5** subroutine IXMattenuator::IXFoperation\_run\_attenuator (type(IXToperation) *op*, character(len=\*) *field*, type(IXTattenuator) *arg*, type(IXTstatus) *status*)

Definition at line 79 of file IXMattenuator.f90.

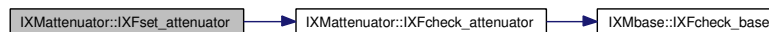
**5.3.1.6** subroutine IXMattenuator::IXFset\_attenuator (type(IXTattenuator),intent(inout) *attenuator*, type(IXTstatus),intent(inout) *status*, character(len=\*),intent(in),optional *name*, real(dp),intent(in),optional *distance*, character(len=\*),intent(in),optional *material*, real(dp),intent(in),optional *thickness*, type(IXTdataset\_1d),intent(in),optional *attenuation*, type(IXTattenuator),intent(in),optional *ref*)

Definition at line 135 of file IXMattenuator.f90.

References IXFcheck\_attenuator().

Referenced by IXFcreate\_attenuator().

Here is the call graph for this function:



## 5.4 IXMbase Namespace Reference

### Classes

- struct IXTbase
- interface IXFget\_real\_array
- interface IXFget\_integer\_array
- interface IXFset\_real\_array
- interface IXFset\_integer\_array

### Functions

- subroutine IXFcheck\_base (arg, status)
- logical IXFinitialised\_base (arg)
- logical IXFvalid\_base (arg)
- subroutine IXFmark\_valid\_base (arg)
- subroutine IXFclear\_valid\_base (arg)
- subroutine IXFdestroy\_base (arg, status)
- subroutine IXFcreate\_base (arg, status)
- subroutine IXFoperation\_run\_base (op, field, arg, status)
- subroutine IXFset\_base (var, status, entry\_name, initialised, valid, ref)
- subroutine IXFget\_base (var, status, entry\_name, initialised, valid, wout)
- subroutine geti\_1d (arr\_in, status, arr\_out)
- subroutine getr\_1d (arr\_in, status, arr\_out)
- subroutine geti\_2d (arr\_in, status, arr\_out)
- subroutine getr\_2d (arr\_in, status, arr\_out)
- subroutine seti\_1d (arr\_out, status, arr\_in)
- subroutine setr\_1d (arr\_out, status, arr\_in)
- subroutine seti\_2d (arr\_out, status, arr\_in)
- subroutine setr\_2d (arr\_out, status, arr\_in)

### Variables

- integer(i4b), parameter IXCobject\_initialised = 15738456
- character(len=short\_len), parameter IXCdetmask = 'detmaskfile'
- character(len=short\_len), parameter IXCmonmask = 'monmaskfile'
- character(len=short\_len), parameter IXCmaskfile = 'genericmaskfile'
- character(len=short\_len), parameter IXCdetmap = 'detmapfile'
- character(len=short\_len), parameter IXCmonmap = 'monmapfile'
- character(len=short\_len), parameter IXCmapfile = 'genericmapfile'
- character(len=short\_len), parameter IXCrawfile = 'rawfile'
- character(len=short\_len), parameter IXCfermi\_chopper = 'chopper'
- character(len=short\_len), parameter IXCsource = 'source'
- character(len=short\_len), parameter IXCchop\_inst = 'chop\_inst'
- character(len=short\_len), parameter IXCdiff\_inst = 'diff\_inst'
- character(len=short\_len), parameter IXCmoderator = 'moderator'
- character(len=short\_len), parameter IXCprogname = 'progname'
- character(len=short\_len), parameter IXCcommand\_line = 'command'
- character(len=short\_len), parameter IXCindi\_inst = 'indi\_inst'
- integer(i4b) IXCdiffracton = 0
- integer(i4b) IXCdirect = 1
- integer(i4b) IXCindirect = 2



### 5.4.1 Function Documentation

**5.4.1.1** subroutine IXMbase::geti\_1d (integer(i4b),dimension(:),intent(in) *arr\_in*, type(IXTstatus) *status*, integer(i4b),dimension(:),intent(out),optional *arr\_out*)

Definition at line 176 of file IXMbase.f90.

**5.4.1.2** subroutine IXMbase::geti\_2d (integer(i4b),dimension(:,:),intent(in) *arr\_in*, type(IXTstatus) *status*, integer(i4b),dimension(:,:),intent(out),optional *arr\_out*)

Definition at line 208 of file IXMbase.f90.

**5.4.1.3** subroutine IXMbase::getr\_1d (real(dp),dimension(:),intent(in) *arr\_in*, type(IXTstatus) *status*, real(dp),dimension(:),intent(out),optional *arr\_out*)

Definition at line 192 of file IXMbase.f90.

**5.4.1.4** subroutine IXMbase::getr\_2d (real(dp),dimension(:,:),intent(in) *arr\_in*, type(IXTstatus) *status*, real(dp),dimension(:,:),intent(out),optional *arr\_out*)

Definition at line 224 of file IXMbase.f90.

**5.4.1.5** subroutine IXMbase::IXFcheck\_base (type(IXTbase) *arg*, type(IXTstatus) *status*)

Definition at line 57 of file IXMbase.f90.

Referenced by IXMaperture::IXFcheck\_aperture(), IXMattenuator::IXFcheck\_attenuator(), IXMbridge::IXFcheck\_bridge(), IXMchopper\_instrument::IXFcheck\_chopper\_instrument(), IXMdet\_he3::IXFcheck\_det\_he3(), IXMdet\_solid::IXFcheck\_det\_solid(), IXMdetector::IXFcheck\_detector(), IXMfermi\_chopper::IXFcheck\_Fermi\_chopper(), IXMlattice::IXFcheck\_lattice(), IXMmap::IXFcheck\_map(), IXMmoderator::IXFcheck\_moderator(), IXMsample::IXFcheck\_sample(), IXMspectra::IXFcheck\_spectra(), IXMsw\_bridge::IXFcheck\_sw\_bridge(), IXMtranslation::IXFcheck\_translation(), IXMuser::IXFcheck\_user(), IXMworkspace::IXFcheck\_workspace(), and IXMws\_bridge::IXFcheck\_ws\_bridge().

**5.4.1.6** subroutine IXMbase::IXFclear\_valid\_base (type(IXTbase) *arg*)

Definition at line 101 of file IXMbase.f90.

**5.4.1.7** subroutine IXMbase::IXFcreate\_base (type(IXTbase) *arg*, type(IXTstatus) *status*)

Definition at line 115 of file IXMbase.f90.

#### 5.4.1.8 subroutine IXMbase::IXFdestroy\_base (type(IXTbase) *arg*, type(IXTstatus) *status*)

Definition at line 107 of file IXMbase.f90.

#### 5.4.1.9 subroutine IXMbase::IXFget\_base (type(IXTbase) *var*, type(IXTstatus) *status*, character(len=\*) *entry\_name*, integer(i4b) *i4b*, intent(out), optional *initialised*, logical, intent(out), optional *valid*, type(IXTbase), intent(out), optional *wout*)

Definition at line 158 of file IXMbase.f90.

References IXFset\_base().

Here is the call graph for this function:



#### 5.4.1.10 logical IXMbase::IXFinitialised\_base (type(IXTbase), intent(in) *arg*)

Definition at line 65 of file IXMbase.f90.

References IXCobject\_initialised.

#### 5.4.1.11 subroutine IXMbase::IXFmark\_valid\_base (type(IXTbase) *arg*)

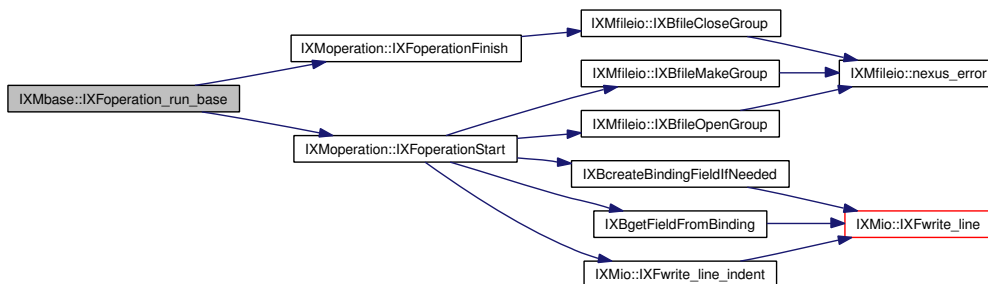
Definition at line 95 of file IXMbase.f90.

#### 5.4.1.12 subroutine IXMbase::IXFoperation\_run\_base (type(IXToperation) *op*, character(len=\*) *field*, type(IXTbase) *arg*, type(IXTstatus) *status*)

Definition at line 121 of file IXMbase.f90.

References IXCobject\_initialised, IXMoperation::IXFoperationFinish(), and IXMoperation::IXFoperationStart().

Here is the call graph for this function:



**5.4.1.13** subroutine IXMbase::IXFset\_base (type(IXTbase) *var*, type(IXTstatus) *status*, character(len=\*)*,intent(in),optional entry\_name*, integer(i4b)*,intent(in),optional initialised*, logical*,intent(in),optional valid*, type(IXTbase)*,intent(in),optional ref*)

Definition at line 141 of file IXMbase.f90.

Referenced by IXFget\_base(), IXMorientation::IXFget\_orientation(), and IXMorientation::IXFset\_orientation().

**5.4.1.14** logical IXMbase::IXFvalid\_base (type(IXTbase)*,intent(in) arg*)

Definition at line 88 of file IXMbase.f90.

**5.4.1.15** subroutine IXMbase::seti\_1d (integer(i4b)*,dimension(:),pointer arr\_out*, type(IXTstatus) *status*, integer(i4b)*,dimension(:),optional arr\_in*)

Definition at line 240 of file IXMbase.f90.

**5.4.1.16** subroutine IXMbase::seti\_2d (integer(i4b)*,dimension(:,:),pointer arr\_out*, type(IXTstatus) *status*, integer(i4b)*,dimension(:,:),optional arr\_in*)

Definition at line 262 of file IXMbase.f90.

**5.4.1.17** subroutine IXMbase::setr\_1d (real(dp)*,dimension(:),pointer arr\_out*, type(IXTstatus) *status*, real(dp)*,dimension(:),optional arr\_in*)

Definition at line 251 of file IXMbase.f90.

**5.4.1.18** subroutine IXMbase::setr\_2d (real(dp)*,dimension(:,:),pointer arr\_out*, type(IXTstatus) *status*, real(dp)*,dimension(:,:),optional arr\_in*)

Definition at line 273 of file IXMbase.f90.

## 5.4.2 Variable Documentation

**5.4.2.1** character(len=short\_len)*,parameter IXMbase::IXCchop\_inst = 'chop\_inst'*

Definition at line 22 of file IXMbase.f90.

**5.4.2.2** character(len=short\_len)*,parameter IXMbase::IXCcommand\_line = 'command'*

Definition at line 23 of file IXMbase.f90.

**5.4.2.3** character(len=short\_len)*,parameter IXMbase::IXCdetmap = 'detmapfile'*

Definition at line 20 of file IXMbase.f90.

**5.4.2.4** `character(len=short_len),parameter IXMbase::IXCdetmask = 'detmaskfile'`

Definition at line 19 of file IXMbase.f90.

**5.4.2.5** `character(len=short_len),parameter IXMbase::IXCdiff_inst = 'diff_inst'`

Definition at line 22 of file IXMbase.f90.

**5.4.2.6** `integer(i4b) IXMbase::IXCdiffractio = 0`

Definition at line 26 of file IXMbase.f90.

**5.4.2.7** `integer(i4b) IXMbase::IXCdirect = 1`

Definition at line 26 of file IXMbase.f90.

**5.4.2.8** `character(len=short_len),parameter IXMbase::IXCfermi_chopper = 'chopper'`

Definition at line 21 of file IXMbase.f90.

**5.4.2.9** `character(len=short_len),parameter IXMbase::IXCindi_inst = 'indi_inst'`

Definition at line 25 of file IXMbase.f90.

**5.4.2.10** `integer(i4b) IXMbase::IXCindirect = 2`

Definition at line 26 of file IXMbase.f90.

**5.4.2.11** `character(len=short_len),parameter IXMbase::IXCmapfile = 'genericmapfile'`

Definition at line 20 of file IXMbase.f90.

Referenced by IXMmap::IXFread\_dso\_map().

**5.4.2.12** `character(len=short_len),parameter IXMbase::IXCmaskfile = 'genericmaskfile'`

Definition at line 19 of file IXMbase.f90.

Referenced by IXMmask::IXFread\_dso\_mask().

**5.4.2.13** `character(len=short_len),parameter IXMbase::IXCmoderator = 'moderator'`

Definition at line 22 of file IXMbase.f90.

**5.4.2.14** `character(len=short_len),parameter IXMbase::IXCmonmap = 'monmapfile'`

Definition at line 20 of file IXMbase.f90.

**5.4.2.15** `character(len=short_len),parameter IXMbase::IXCmonmask = 'monmaskfile'`

Definition at line 19 of file IXMbase.f90.

**5.4.2.16** `integer(i4b),parameter IXMbase::IXCobject_initialised = 15738456`

Definition at line 10 of file IXMbase.f90.

Referenced by IXFinitialised\_base(), and IXFoperation\_run\_base().

**5.4.2.17** `character(len=short_len),parameter IXMbase::IXCprognome = 'prognome'`

Definition at line 23 of file IXMbase.f90.

**5.4.2.18** `character(len=short_len),parameter IXMbase::IXCrawfile = 'rawfile'`

Definition at line 21 of file IXMbase.f90.

**5.4.2.19** `character(len=short_len),parameter IXMbase::IXCsource = 'source'`

Definition at line 21 of file IXMbase.f90.

## 5.5 IXMbridge Namespace Reference

### Classes

- struct `IXTbridge`

### Functions

- subroutine `IXFoperation_run_bridge` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcreate_bridge` (`bridge`, `ws_bridge`, `sw_bridge`, `status`)
- subroutine `IXFcheck_bridge` (`arg`, `status`)
- subroutine `IXFdestroy_bridge` (`bridge`, `status`)
- subroutine `IXFset_bridge` (`bridge`, `status`, `ws_bridge`, `sw_bridge`, `ref`)
- subroutine `IXFget_bridge` (`bridge`, `status`, `ws_bridge`, `sw_bridge`, `wout`)
- subroutine `IXFget_ptr_bridge` (`bridge`, `ws_bridge`, `sw_bridge`)
- logical `IXFcompare_bridge` (`bridge1`, `bridge2`)
- subroutine `IXFpopulate_bridge` (`bridge`, `map`, `mask`, `status`)

### 5.5.1 Function Documentation

#### 5.5.1.1 subroutine `IXMbridge::IXFcheck_bridge` (`type(IXTbridge)` *arg*, `type(IXTstatus)` *status*)

Definition at line 88 of file `IXMbridge.f90`.

References `IXMbase::IXFcheck_base()`.

Referenced by `IXFset_bridge()`.

Here is the call graph for this function:



#### 5.5.1.2 logical `IXMbridge::IXFcompare_bridge` (`type(IXTbridge)`, `intent(in)` *bridge1*, `type(IXTbridge)`, `intent(in)` *bridge2*)

Definition at line 198 of file `IXMbridge.f90`.

References `IXMws_bridge::IXFcompare_ws_bridge()`.

Referenced by `IXMdata::IXFcomparebridge_data()`.

Here is the call graph for this function:



**5.5.1.3** subroutine IXMbridge::IXFcreate\_bridge (type(IXTbridge) *bridge*, type(IXTws\_bridge),intent(in) *ws\_bridge*, type(IXTsw\_bridge),intent(in) *sw\_bridge*, type(IXTstatus) *status*)

Definition at line 57 of file IXMbridge.f90.

References IXFset\_bridge().

Here is the call graph for this function:



**5.5.1.4** subroutine IXMbridge::IXFdestroy\_bridge (type(IXTbridge) *bridge*, type(IXTstatus) *status*)

Definition at line 105 of file IXMbridge.f90.

**5.5.1.5** subroutine IXMbridge::IXFget\_bridge (type(IXTbridge),intent(in) *bridge*, type(IXTstatus) *status*, type(IXTws\_bridge),intent(out),optional *ws\_bridge*, type(IXTsw\_bridge),intent(out),optional *sw\_bridge*, type(IXTbridge),intent(out),optional *wout*)

Definition at line 166 of file IXMbridge.f90.

**5.5.1.6** subroutine IXMbridge::IXFget\_ptr\_bridge (type(IXTbridge),target *bridge*, type(IXTws\_bridge),optional,pointer *ws\_bridge*, type(IXTsw\_bridge),optional,pointer *sw\_bridge*)

Definition at line 185 of file IXMbridge.f90.

Referenced by IXMdata::IXFremap\_data(), IXMdata::populate\_common(), IXMdata::remap\_data(), and IXMdata::sum\_data().

**5.5.1.7** subroutine IXMbridge::IXFoperation\_run\_bridge (type(IXToperation) *op*, character(len=\*) *field*, type(IXTbridge) *arg*, type(IXTstatus) *status*)

Definition at line 36 of file IXMbridge.f90.

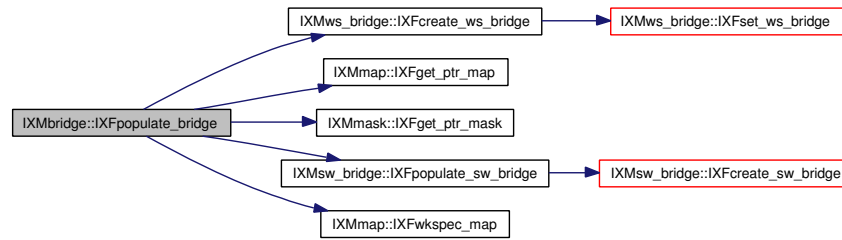
**5.5.1.8** subroutine IXMbridge::IXFpopulate\_bridge (type(IXTbridge) *bridge*, type(IXTmap),intent(in) *map*, type(IXTmask),intent(in) *mask*, type(IXTstatus) *status*)

Definition at line 209 of file IXMbridge.f90.

References IXMws\_bridge::IXFcreate\_ws\_bridge(), IXMmap::IXFget\_ptr\_map(), IXMmask::IXFget\_ptr\_mask(), IXMsw\_bridge::IXFpopulate\_sw\_bridge(), and IXMmap::IXFwkspec\_map().

Referenced by IXMdata::IXFpopulate\_data\_dso(), and IXMdata::IXFremap\_data().

Here is the call graph for this function:



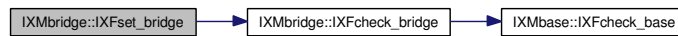
**5.5.1.9 subroutine IXMbridge::IXFset\_bridge (type(IXTbridge),intent(inout) *bridge*, type(IXTstatus) *status*, type(IXTws\_bridge),optional *ws\_bridge*, type(IXTsw\_bridge),optional *sw\_bridge*, type(IXTbridge),intent(in),optional *ref*)**

Definition at line 128 of file IXMbridge.f90.

References IXFcheck\_bridge().

Referenced by IXFcreate\_bridge().

Here is the call graph for this function:





## 5.6 IXMchopper\_instrument Namespace Reference

### Classes

- struct IXTchopper\_instrument
- interface IXFget\_ptr
- interface IXFget\_emode

### Functions

- subroutine get\_ptr (ci\_ptr)
- subroutine get\_emode (c\_inst, status, emode, efixed)
- subroutine IXFoperation\_run\_chopper\_instrument (op, field, arg, status)
- subroutine IXFcreate\_chopper\_instrument (chopper\_instrument, monochromator, status)
- subroutine IXFcheck\_chopper\_instrument (arg, status)
- subroutine IXFdestroy\_chopper\_instrument (chopper\_instrument, status)
- subroutine IXFset\_chopper\_instrument (chopper\_instrument, status, monochromator, ref)
- subroutine IXFget\_chopper\_instrument (chopper\_instrument, status, monochromator, wout)
- subroutine IXFget\_ptr\_chopper\_instrument (chopper\_instrument, monochromator)
- subroutine IXFpopulate\_chopper\_instrument (ci, dso, status)

### Variables

- type(IXTchopper\_instrument), target, save chop\_inst

### 5.6.1 Function Documentation

**5.6.1.1** subroutine IXMchopper\_instrument::get\_emode (type (IXTchopper\_instrument) *c\_inst*, type(IXTstatus) *status*, integer(i4b) *emode*, real(dp), optional *efixed*)

Definition at line 49 of file IXMchopper\_instrument.f90.

**5.6.1.2** subroutine IXMchopper\_instrument::get\_ptr (type(IXTchopper\_instrument), pointer *ci\_ptr*)

Definition at line 42 of file IXMchopper\_instrument.f90.

References chop\_inst.

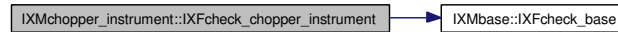
**5.6.1.3** subroutine IXMchopper\_instrument::IXFcheck\_chopper\_instrument (type(IXTchopper\_instrument) *arg*, type(IXTstatus) *status*)

Definition at line 108 of file IXMchopper\_instrument.f90.

References IXMbase::IXFcheck\_base().

Referenced by IXFset\_chopper\_instrument().

Here is the call graph for this function:



**5.6.1.4** subroutine IXMchopper\_instrument::IXFcreate\_chopper\_instrument  
 (type(IXTchopper\_instrument) *chopper\_instrument*,  
 type(IXTfermi\_chopper),intent(in) *monochromator*, type(IXTstatus)  
*status*)

Definition at line 84 of file IXMchopper\_instrument.f90.

References IXFset\_chopper\_instrument().

Here is the call graph for this function:



**5.6.1.5** subroutine IXMchopper\_instrument::IXFdestroy\_chopper\_instrument  
 (type(IXTchopper\_instrument) *chopper\_instrument*, type(IXTstatus)  
*status*)

Definition at line 125 of file IXMchopper\_instrument.f90.

**5.6.1.6** subroutine IXMchopper\_instrument::IXFget\_chopper\_instrument  
 (type(IXTchopper\_instrument),intent(in) *chopper\_instrument*,  
 type(IXTstatus) *status*, type(IXTfermi\_chopper),intent(out),optional  
*monochromator*, type(IXTchopper\_instrument),intent(out),optional *wout*)

Definition at line 184 of file IXMchopper\_instrument.f90.

**5.6.1.7** subroutine IXMchopper\_instrument::IXFget\_ptr\_chopper\_instrument  
 (type(IXTchopper\_instrument),target *chopper\_instrument*,  
 type(IXTfermi\_chopper),optional,pointer *monochromator*)

Definition at line 202 of file IXMchopper\_instrument.f90.

Referenced by IXMrunfile::IXFeffic\_norm\_runfile(), and IXMrunfile::IXFgeteival\_runfile().

**5.6.1.8** subroutine IXMchopper\_instrument::IXFoperation\_run\_chopper\_  
 instrument (type(IXToperation) *op*, character(len=\*) *field*,  
 type(IXTchopper\_instrument) *arg*, type(IXTstatus) *status*)

Definition at line 64 of file IXMchopper\_instrument.f90.

**5.6.1.9** subroutine IXMchopper\_instrument::IXFpopulate\_chopper\_instrument  
(type(IXTchopper\_instrument) *ci*, type(IXTdata\_source) *dso*,  
type(IXTstatus) *status*)

Definition at line 212 of file IXMchopper\_instrument.f90.

Referenced by IXMinstrument::IXFpopulate\_instrument().

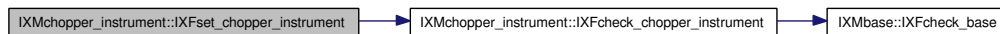
**5.6.1.10** subroutine IXMchopper\_instrument::IXFset\_chopper\_instrument  
(type(IXTchopper\_instrument),intent(inout) *chopper\_instrument*,  
type(IXTstatus) *status*, type(IXTfermi\_chopper),optional  
*monochromator*, type(IXTchopper\_instrument),intent(in),optional *ref*)

Definition at line 147 of file IXMchopper\_instrument.f90.

References IXFcheck\_chopper\_instrument().

Referenced by IXFcreate\_chopper\_instrument().

Here is the call graph for this function:



## 5.6.2 Variable Documentation

**5.6.2.1** type(IXTchopper\_instrument),target,save IXMchopper\_instrument::chop\_inst

Definition at line 31 of file IXMchopper\_instrument.f90.

Referenced by get\_ptr().

## 5.7 IXMcrystalanalyser Namespace Reference

### Classes

- struct `IXTcrystalanalyser`

## 5.8 IXMdata Namespace Reference

### Classes

- struct `IXTdata`
- interface `IXFpopulate_data`

### Functions

- subroutine `IXFget_ptr_data` (`data`, `datasets`, `workspace`, `bridge`)
- subroutine `IXFget_data` (`data`, `status`, `datasets`, `workspace`, `bridge`, `wout`)
- subroutine `IXFget_alloc_data` (`data`, `status`, `datasets`, `workspace`, `bridge`, `wout`)
- subroutine `IXFoperation_run_data` (`op`, `field`, `arg`, `status`)
- subroutine `IXFset_data` (`data`, `status`, `datasets`, `workspace`, `bridge`, `ref`)
- subroutine `IXFdestroy_data` (`data`, `status`)
- subroutine `IXFcreate_data` (`data`, `datasets`, `workspace`, `bridge`, `status`)
- subroutine `IXFcheck_data` (`data`, `status`)
- subroutine `IXFbackground_data` (`data`, `min`, `max`, `status`)
- subroutine `popunitsrebin_datasets` (`data`, `spe_ptr`, `det_ptr`, `L1`, `efixed`, `emode`, `rbparams`, `units_out`, `status`)
- subroutine `IXFunits_data` (`data`, `status`, `emode`, `efixed`, `L1`, `units_out`)
- subroutine `IXFunits_rebin_data` (`data`, `status`, `emode`, `efixed`, `L1`, `units_out`, `Xdesc`, `Xref`)
- subroutine `sum_data` (`data`, `status`)
- subroutine `IXFrebin_data` (`data`, `status`, `Xdesc`, `Xref`)
- subroutine `IXFremap_data` (`detdata`, `dso`, `dmap`, `dmask`, `det_ptr`, `spe_ptr`, `status`)
- subroutine `remap_data` (`data`, `newbridge`, `lookup`, `status`)
- subroutine `IXFgetei_data` (`mondata`, `Ei`, `L1`, `status`)
- subroutine `IXFpeakarea_data` (`mondata`, `L1`, `ei`, `index`, `area`, `status`)
- subroutine `IXFcomparebridge_data` (`data1`, `data2`, `ident`, `status`)
- subroutine `IXFpopulate_data_dso` (`data`, `period`, `map`, `mask`, `status`, `input-source`, `dso`, `det_ptr`, `spe_ptr`, `efixed`, `emode`, `L1`, `uflag`, `rflag`, `rbparams`, `units_out`, `opt`, `bgrd`)
- subroutine `populate_common` (`data`, `period`, `status`, `inputsource`, `det_ptr`, `spe_ptr`)

### 5.8.1 Function Documentation

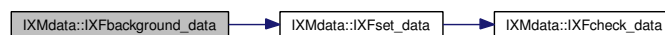
5.8.1.1 subroutine `IXMdata::IXFbackground_data` (`type(IXTdata)` *data*, `real(dp),intent(in)` *min*, `real(dp),intent(in)` *max*, `type(IXTstatus)` *status*)

Definition at line 252 of file `IXMdata.f90`.

References `IXFset_data()`.

Referenced by `IXMrunfile::IXFbackground_runfile()`, and `IXFpopulate_data_dso()`.

Here is the call graph for this function:



### 5.8.1.2 subroutine IXMdata::IXFcheck\_data (type(IXTdata) *data*, type(IXTstatus) *status*)

Definition at line 237 of file IXMdata.f90.

Referenced by IXFset\_data().

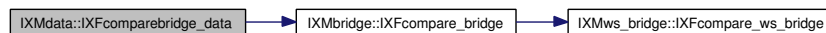
### 5.8.1.3 subroutine IXMdata::IXFcomparebridge\_data (type(IXTdata),intent(in) *data1*, type(IXTdata),intent(in) *data2*, logical *ident*, type(IXTstatus) *status*)

Definition at line 748 of file IXMdata.f90.

References IXMbridge::IXFcompare\_bridge().

Referenced by IXMrunfile::IXFsolid\_runfile().

Here is the call graph for this function:

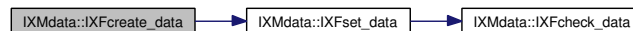


### 5.8.1.4 subroutine IXMdata::IXFcreate\_data (type(IXTdata) *data*, type(IXTdataset\_2d),dimension(:),intent(in) *datasets*, type(IXTworkspace),intent(in) *workspace*, type(IXTbridge),intent(in) *bridge*, type(IXTstatus) *status*)

Definition at line 199 of file IXMdata.f90.

References IXFset\_data().

Here is the call graph for this function:



### 5.8.1.5 subroutine IXMdata::IXFdestroy\_data (type(IXTdata) *data*, type(IXTstatus) *status*)

Definition at line 176 of file IXMdata.f90.

### 5.8.1.6 subroutine IXMdata::IXFget\_alloc\_data (type(IXTdata),intent(in) *data*, type(IXTstatus) *status*, type(IXTdataset\_2d),dimension(:),optional,allocatable *datasets*, type(IXTworkspace),intent(out),optional *workspace*, type(IXTbridge),intent(out),optional *bridge*, type(IXTdata),intent(out),optional *wout*)

Definition at line 81 of file IXMdata.f90.

References IXFget\_data().

Referenced by IXMrunfile::IXFgetdetdata\_runfile(), and IXMrunfile::IXFgetmondata\_runfile().

Here is the call graph for this function:



**5.8.1.7** subroutine `IXMdata::IXFget_data` (`type(IXTdata)`, `intent(in)` *data*, `type(IXTstatus)` *status*, `type(IXTdataset_2d)`, `dimension(:)`, `optional`, `allocatable` *datasets*, `type(IXTworkspace)`, `intent(out)`, `optional` *workspace*, `type(IXTbridge)`, `intent(out)`, `optional` *bridge*, `type(IXTdata)`, `intent(out)`, `optional` *wout*)

Definition at line 63 of file `IXMdata.f90`.

Referenced by `IXFget_alloc_data()`.

**5.8.1.8** subroutine `IXMdata::IXFget_ptr_data` (`type(IXTdata)`, `target` *data*, `type(IXTdataset_2d)`, `dimension(:)`, `optional`, `pointer` *datasets*, `type(IXTworkspace)`, `optional`, `pointer` *workspace*, `type(IXTbridge)`, `optional`, `pointer` *bridge*)

Definition at line 49 of file `IXMdata.f90`.

Referenced by `IXMrunfile::IXFcharge_norm_runfile()`, `IXMrunfile::IXFeffc_norm_runfile()`, `IXMrunfile::IXFmon_norm_runfile()`, `IXMrunfile::IXFpeak_norm_runfile()`, and `IXMrunfile::IXFsolid_runfile()`.

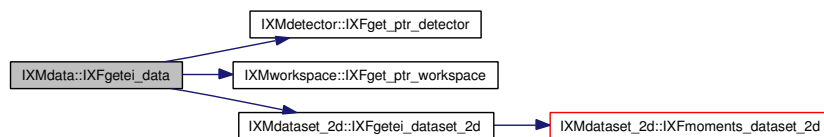
**5.8.1.9** subroutine `IXMdata::IXFgetei_data` (`type(IXTdata)` *mondata*, `real(dp)` *Ei*, `real(dp)` *L1*, `type(IXTstatus)` *status*)

Definition at line 692 of file `IXMdata.f90`.

References `IXMdetector::IXFget_ptr_detector()`, `IXMworkspace::IXFget_ptr_workspace()`, and `IXMdataset_2d::IXFgetei_dataset_2d()`.

Referenced by `IXMrunfile::IXFgetei_runfile()`.

Here is the call graph for this function:



**5.8.1.10** subroutine `IXMdata::IXFoperation_run_data` (`type(IXToperation)` *op*, `character(len=*)` *field*, `type(IXTdata)` *arg*, `type(IXTstatus)` *status*)

Definition at line 99 of file `IXMdata.f90`.

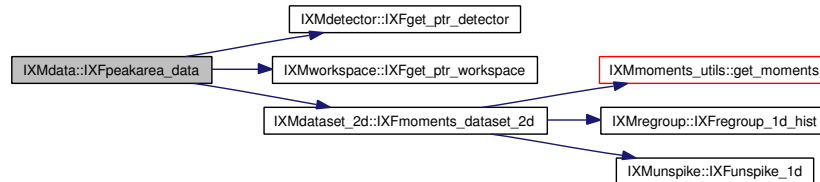
**5.8.1.11** subroutine `IXMdata::IXFpeakarea_data` (`type(IXTdata) mondata`, `real(dp),intent(in) L1`, `real(dp),intent(in) ei`, `integer(i4b),intent(in) index`, `real(dp),intent(out) area`, `type(IXTstatus) status`)

Definition at line 718 of file `IXMdata.f90`.

References `IXMdetector::IXFget_ptr_detector()`, `IXMworkspace::IXFget_ptr_workspace()`, and `IXMdataset_2d::IXFmoments_dataset_2d()`.

Referenced by `IXMrunfile::IXFpeak_norm_runfile()`.

Here is the call graph for this function:

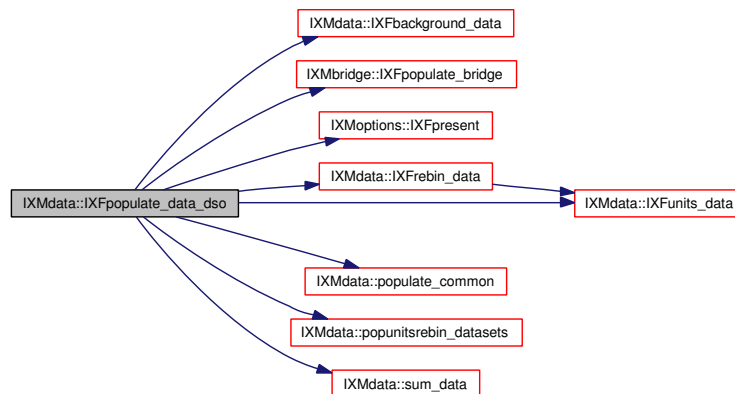


**5.8.1.12** subroutine `IXMdata::IXFpopulate_data_dso` (`type(IXTdata) data`, `integer(i4b),intent(in) period`, `type(IXTmap),intent(in) map`, `type(IXTmask),intent(in) mask`, `type(IXTstatus) status`, `type(IXTisis_raw_file),intent(inout) inputsource`, `type(IXTdata_source),intent(in) dso`, `type(IXTdetector),pointer det_ptr`, `type(IXTspectra),pointer spe_ptr`, `real(dp),intent(in) efixed`, `integer(i4b),intent(in) emode`, `real(dp),intent(in) L1`, `logical,intent(in) uflag`, `logical,intent(in) rflag`, `real(dp),dimension(:),intent(in),optional rbparams`, `type(IXTunits),intent(in),optional units_out`, `type(IXToptions),optional opt`, `real(dp),dimension(2),intent(in),optional bgrd`)

Definition at line 766 of file `IXMdata.f90`.

References `IXFbackground_data()`, `IXMbridge::IXFpopulate_bridge()`, `IXMoptions::IXFpresent()`, `IXMdata::IXFrebin_data()`, `IXMdata::IXFunits_data()`, `populate_common()`, `popunitsrebin_datasets()`, and `sum_data()`.

Here is the call graph for this function:





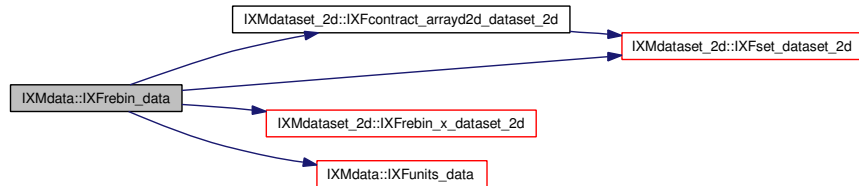
**5.8.1.13** subroutine `IXMdata::IXFrebin_data` (`type(IXTdata) data`,  
`type(IXTstatus) status`, `real(dp),dimension(:),intent(in),optional Xdesc`,  
`type(IXTdataset_2d),intent(in),optional Xref`)

Definition at line 536 of file `IXMdata.f90`.

References `IXMdataset_2d::IXFcontract_array2d_dataset_2d()`, `IXMdataset_2d::IXFrebin_x_dataset_2d()`, `IXMdataset_2d::IXFset_dataset_2d()`, and `IXFunits_data()`.

Referenced by `IXFpopulate_data_dso()`, and `IXMrunfile::IXFrebin_runfile()`.

Here is the call graph for this function:



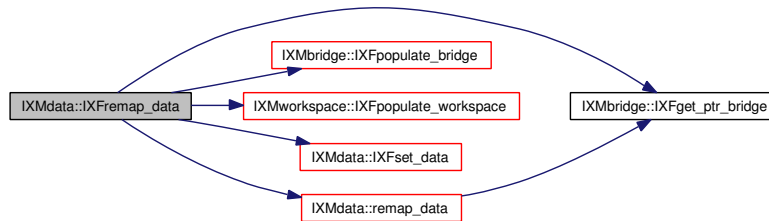
**5.8.1.14** subroutine `IXMdata::IXFremap_data` (`type(IXTdata) detdata`,  
`type(IXTdata_source),intent(in) dso`, `type(IXTmap) dmap`,  
`type(IXTmask) dmask`, `type(IXTdetector),pointer det_ptr`,  
`type(IXTspectra),pointer spe_ptr`, `type(IXTstatus) status`)

Definition at line 584 of file `IXMdata.f90`.

References `IXMbridge::IXFget_ptr_bridge()`, `IXMbridge::IXFpopulate_bridge()`,  
`IXMworkspace::IXFpopulate_workspace()`, `IXFset_data()`, and `remap_data()`.

Referenced by `IXMrunfile::IXFremap_runfile()`.

Here is the call graph for this function:



**5.8.1.15** subroutine `IXMdata::IXFset_data` (`type(IXTdata) data`, `type(IXTstatus) status`,  
`type(IXTdataset_2d),dimension(:),intent(in),optional datasets`, `type(IXTworkspace),intent(in),optional workspace`,  
`type(IXTbridge),intent(in),optional bridge`,  
`type(IXTdata),intent(in),optional ref`)

Definition at line 123 of file `IXMdata.f90`.

References `IXFcheck_data()`.

Referenced by IXFbackground\_data(), IXFcreate\_data(), IXFremap\_data(), IXMrunfile::IXFsolid\_runfile(), and IXFunits\_data().

Here is the call graph for this function:



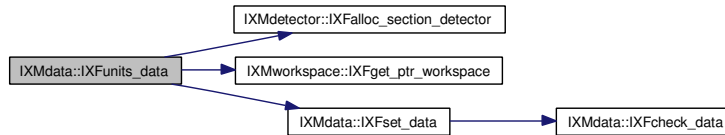
**5.8.1.16** subroutine IXMdata::IXFunits\_data (type(IXTdata) data, type(IXTstatus) status, integer(i4b),intent(in) emode, real(dp),intent(in) *efixed*, real(dp),intent(in) L1, type(IXTunits),intent(in) units\_out)

Definition at line 328 of file IXMdata.f90.

References IXMdetector::IXFalloc\_section\_detector(), IXMworkspace::IXFget\_ptr\_workspace(), and IXFset\_data().

Referenced by IXFpopulate\_data\_dso(), IXFrebin\_data(), IXFunits\_rebin\_data(), and IXMrunfile::units\_runfile().

Here is the call graph for this function:



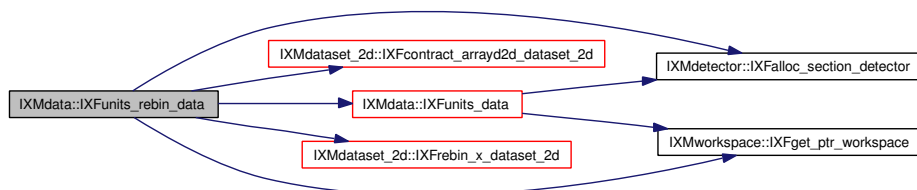
**5.8.1.17** subroutine IXMdata::IXFunits\_rebin\_data (type(IXTdata) data, type(IXTstatus) status, integer(i4b),intent(in) emode, real(dp),intent(in) *efixed*, real(dp),intent(in) L1, type(IXTunits),intent(in) units\_out, real(dp),dimension(:),intent(in),optional Xdesc, type(IXTdataset\_2d),optional Xref)

Definition at line 383 of file IXMdata.f90.

References IXMdetector::IXFalloc\_section\_detector(), IXMdataset\_2d::IXFcontract\_arrayd2d\_dataset\_2d(), IXMworkspace::IXFget\_ptr\_workspace(), IXMdataset\_2d::IXFrebin\_x\_dataset\_2d(), and IXFunits\_data().

Referenced by IXMrunfile::units\_rebinXdesc\_runfile(), and IXMrunfile::units\_rebinXref\_runfile().

Here is the call graph for this function:



**5.8.1.18** subroutine IXMdata::populate\_common (type(IXTdata) *data*, integer(i4b),intent(in) *period*, type(IXTstatus) *status*, type(IXTisis\_raw\_file),intent(inout) *inputsource*, type(IXTdetector),pointer *det\_ptr*, type(IXTspectra),pointer *spe\_ptr*)

Definition at line 822 of file IXMdata.f90.

References IXMbridge::IXFget\_ptr\_bridge(), and IXMworkspace::IXFpopulate\_workspace().

Referenced by IXFpopulate\_data\_dso().

Here is the call graph for this function:



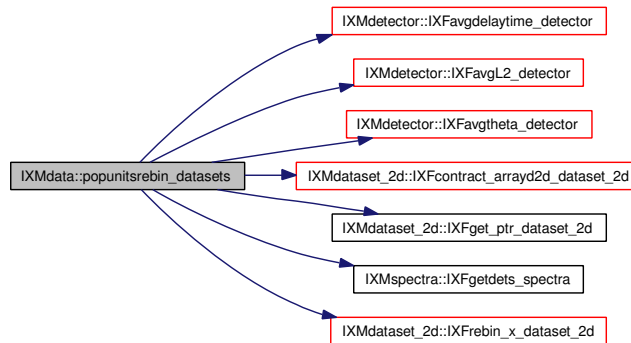
**5.8.1.19** subroutine IXMdata::popunitsrebin\_datasets (type(IXTdata) *data*, type(IXTspectra),intent(in) *spe\_ptr*, type(IXTdetector),intent(in) *det\_ptr*, real(dp),intent(in) *L1*, real(dp),intent(in) *efixed*, integer(i4b),intent(in) *emode*, real(dp),dimension(:),intent(in) *rbparams*, type(IXTunits),intent(in) *units\_out*, type(IXTstatus) *status*)

Definition at line 274 of file IXMdata.f90.

References IXMdetector::IXFavgdelaytime\_detector(), IXMdetector::IXFavgL2\_detector(), IXMdetector::IXFavgtheta\_detector(), IXMdataset\_2d::IXFcontract\_arrayd2d\_dataset\_2d(), IXMdataset\_2d::IXFget\_ptr\_dataset\_2d(), IXMspectra::IXFgetdets\_spectra(), and IXMdataset\_2d::IXFrebin\_x\_dataset\_2d().

Referenced by IXFpopulate\_data\_dso().

Here is the call graph for this function:



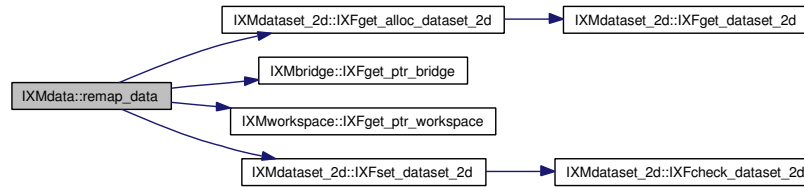
**5.8.1.20** subroutine IXMdata::remap\_data (type(IXTdata) *data*, type(IXTbridge),intent(in) *newbridge*, integer(i4b),dimension(:),intent(in) *lookup*, type(IXTstatus) *status*)

Definition at line 627 of file IXMdata.f90.

References `IXMdataset_2d::IXFget_alloc_dataset_2d()`, `IXMbridge::IXFget_ptr_bridge()`, `IXMworkspace::IXFget_ptr_workspace()`, and `IXMdataset_2d::IXFset_dataset_2d()`.

Referenced by `IXFremap_data()`.

Here is the call graph for this function:



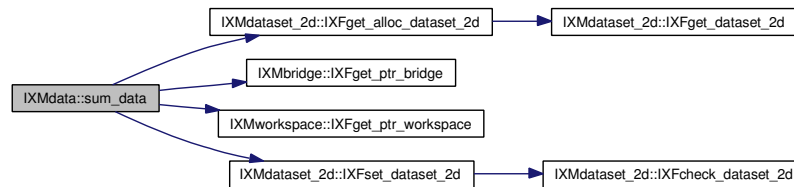
#### 5.8.1.21 subroutine `IXMdata::sum_data` (`type(IXTdata) data`, `type(IXTstatus) status`)

Definition at line 478 of file `IXMdata.f90`.

References `IXMdataset_2d::IXFget_alloc_dataset_2d()`, `IXMbridge::IXFget_ptr_bridge()`, `IXMworkspace::IXFget_ptr_workspace()`, and `IXMdataset_2d::IXFset_dataset_2d()`.

Referenced by `IXFpopulate_data_dso()`.

Here is the call graph for this function:



## 5.9 IXMdata\_source Namespace Reference

### Classes

- struct `IXTdata_source`
- interface `IXFfile_read`
- interface `IXFfile_write`
- interface `IXFcheck`

### Functions

- subroutine `IXFcheck_data_source` (*arg*, *status*)
- subroutine `IXFcheck_array_data_source` (*w1*, *s*)
- subroutine `IXFfile_read_data_source` (*value*, *fi*, *name*, *status*)
- subroutine `IXFfile_write_data_source` (*value*, *fi*, *name*, *status*)
- subroutine `IXFcreate_data_source` (*data\_source*, *path*, *datatype*, *status*)
- subroutine `IXFdestroy_data_source` (*data\_source*, *status*)
- subroutine `IXFset_data_source` (*data\_source*, *status*, *path*, *datatype*, *ref*)
- subroutine `IXFget_data_source` (*data\_source*, *status*, *path*, *datatype*, *wout*)
- subroutine `IXFget_ptr_data_source` (*data\_source*, *path*, *datatype*)
- subroutine `IXFfindpath_data_source` (*dso*, *rpath*, *dtype*, *found*, *status*, *index*)
- subroutine `IXFadditem_data_source` (*dso*, *path*, *dtype*, *status*)
- subroutine `IXFdelitem_data_source` (*dso*, *dtype*, *status*)
- subroutine `IXFreplaceitem_data_source` (*dso*, *path*, *dtype*, *status*)

### Variables

- integer(*i4b*), parameter `IXCdso_initlength = 20`

### 5.9.1 Function Documentation

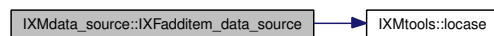
**5.9.1.1** subroutine `IXMdata_source::IXFadditem_data_source`  
 (*type*(`IXTdata_source`) *dso*, *character*(*len*=\*)*,intent(in) path*,  
*character*(*len*=\*)*,intent(in) dtype*, *type*(`IXTstatus`) *status*)

Definition at line 260 of file `IXMdata_source.f90`.

References `IXCdso_initlength`, and `IXMtools::locase()`.

Referenced by `IXFreplaceitem_data_source()`.

Here is the call graph for this function:



**5.9.1.2** subroutine `IXMdata_source::IXFcheck_array_data_source`  
 (*type*(`IXTdata_source`),*dimension*(:) *w1*, *type*(`IXTstatus`) *s*)

Definition at line 60 of file `IXMdata_source.f90`.

**5.9.1.3** subroutine `IXMdata_source::IXFcheck_data_source`  
 (type(`IXTdata_source`) *arg*, type(`IXTstatus`) *status*)

Definition at line 39 of file `IXMdata_source.f90`.

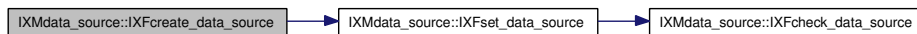
Referenced by `IXFset_data_source()`.

**5.9.1.4** subroutine `IXMdata_source::IXFcreate_data_source` (type(`IXTdata_source`) *data\_source*, character(len=\*) *dimension*(:), intent(in), allocatable *path*, character(len=\*) *dimension*(:), intent(in), allocatable *datatype*, type(`IXTstatus`) *status*)

Definition at line 94 of file `IXMdata_source.f90`.

References `IXFset_data_source()`.

Here is the call graph for this function:

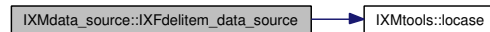


**5.9.1.5** subroutine `IXMdata_source::IXFdelitem_data_source`  
 (type(`IXTdata_source`) *dso*, character(len=\*) *dtype*, type(`IXTstatus`) *status*)

Definition at line 299 of file `IXMdata_source.f90`.

References `IXMtools::locase()`.

Here is the call graph for this function:



**5.9.1.6** subroutine `IXMdata_source::IXFdestroy_data_source`  
 (type(`IXTdata_source`) *data\_source*, type(`IXTstatus`) *status*)

Definition at line 131 of file `IXMdata_source.f90`.

**5.9.1.7** subroutine `IXMdata_source::IXFfile_read_data_source`  
 (type(`IXTdata_source`) *value*, type(`IXTfileio`) *fio*, character(len=\*) *name*, type(`IXTstatus`) *status*)

Definition at line 70 of file `IXMdata_source.f90`.

**5.9.1.8** subroutine `IXMdata_source::IXFfile_write_data_source`  
 (type(`IXTdata_source`) *value*, type(`IXTfileio`) *fio*, character(len=\*) *name*, type(`IXTstatus`) *status*)

Definition at line 79 of file `IXMdata_source.f90`.

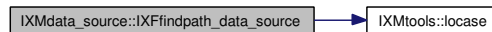
**5.9.1.9** subroutine `IXMdata_source::IXFindpath_data_source`  
 (type(`IXTdata_source`),intent(in) *dso*, character(len=\*),intent(out) *rpath*, character(len=\*),intent(in) *dtype*, logical,intent(out) *found*, type(`IXTstatus`) *status*, integer(i4b),intent(out),optional *index*)

Definition at line 225 of file `IXMdata_source.f90`.

References `IXMtools::locase()`.

Referenced by `IXMinstrument::IXFpopulate_instrument()`, `IXMmap::IXFread_dso_map()`, `IXMmask::IXFread_dso_mask()`, `IXMmask::IXFreadgen_dso_mask()`, `IXMrunfile::IXFremap_runfile()`, `IXFreplaceitem_data_source()`, `IXMrunfile::loaddetmap()`, `IXMrunfile::loadmask()`, `IXMrunfile::loadmonmap()`, and `IXMrunfile::loaddrawfile()`.

Here is the call graph for this function:

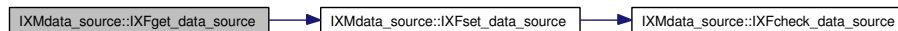


**5.9.1.10** subroutine `IXMdata_source::IXFget_data_source` (type(`IXTdata_source`),intent(in) *data\_source*, type(`IXTstatus`) *status*, character(len=\*),dimension(:),intent(out),optional,allocatable *path*, character(len=\*),dimension(:),intent(out),optional,allocatable *datatype*, type(`IXTdata_source`),intent(out),optional *wout*)

Definition at line 178 of file `IXMdata_source.f90`.

References `IXFset_data_source()`.

Here is the call graph for this function:



**5.9.1.11** subroutine `IXMdata_source::IXFget_ptr_data_source` (type(`IXTdata_source`),target *data\_source*, character(len=long\_len),dimension(:),optional,pointer *path*, character(len=long\_len),dimension(:),optional,pointer *datatype*)

Definition at line 208 of file `IXMdata_source.f90`.

**5.9.1.12** subroutine `IXMdata_source::IXFreplaceitem_data_source`  
 (type(`IXTdata_source`) *dso*, character(len=\*),intent(in) *path*, character(len=\*),intent(in) *dtype*, type(`IXTstatus`) *status*)

Definition at line 333 of file `IXMdata_source.f90`.

References `IXFadditem_data_source()`, and `IXFindpath_data_source()`.

Here is the call graph for this function:



**5.9.1.13** subroutine `IXMdata_source::IXFset_data_source` (`type(IXTdata_source)`,`intent(inout)` *data\_source*, `type(IXTstatus)` *status*, `character(len=*)`,`dimension(:)`,`intent(in)`,`optional`,`allocatable` *path*, `character(len=*)`,`dimension(:)`,`intent(in)`,`optional`,`allocatable` *datatype*, `type(IXTdata_source)`,`intent(in)`,`optional` *ref*)

Definition at line 153 of file `IXMdata_source.f90`.

References `IXFcheck_data_source()`.

Referenced by `IXFcreate_data_source()`, and `IXFget_data_source()`.

Here is the call graph for this function:



## 5.9.2 Variable Documentation

**5.9.2.1** `integer(i4b)`,parameter `IXMdata_source::IXCdso_initlength = 20`

Definition at line 21 of file `IXMdata_source.f90`.

Referenced by `IXFadditem_data_source()`.



## 5.10 IXMdataset\_1d Namespace Reference

### Classes

- struct IXTdataset\_1d
- interface IXFplus\_dataset\_1d
- interface IXFplus
- interface IXFminus\_dataset\_1d
- interface IXFminus
- interface IXFtimes\_dataset\_1d
- interface IXFtimes
- interface IXFdivide\_dataset\_1d
- interface IXFdivide
- interface IXFpower\_dataset\_1d
- interface IXFpower
- interface IXFexp
- interface IXFlog
- interface IXFsin
- interface IXFcos
- interface IXFtan
- interface IXFsinh
- interface IXFcosh
- interface IXFtanh
- interface IXFunspike
- interface interface

### Functions

- subroutine IXFget\_ptr\_dataset\_1d (w1, x, signal, error)
- subroutine IXFdestroy\_dataset\_1d (w1d, status)
- subroutine IXFget\_dataset\_1d (dataset\_1d, status, title, signal, error, s\_units, x, x\_units, x\_distribution, wout)
- subroutine IXFget\_alloc\_dataset\_1d (w1, status, title, signal, error, s\_units, x, x\_units, x\_distribution, wout)
- subroutine IXFmake\_dataset\_1d (dataset\_1d, nx, dist, hist, status)
- subroutine IXFcreate\_dataset\_1d (dataset\_1d, title, signal, error, s\_units, x, x\_units, x\_distribution, status)
- subroutine IXFcreatexye\_dataset\_1d (dataset\_1d, x, signal, error, status)
- subroutine IXFset\_dataset\_1d (dataset\_1d, status, title, signal, error, s\_units, x, x\_units, x\_distribution, ref)
- subroutine IXFoperation\_run\_dataset\_1d (op, field, arg, status)
- subroutine IXFcheck\_dataset\_1d (w1, status)
- subroutine IXFintegrate\_dataset\_1d (ires, w1, xmin\_in, xmax\_in, status)
- subroutine IXFrebunch\_dataset\_1d (wres, w1, nbunch, status)
- subroutine IXFrebin\_dataset\_1d (wres, status, w2, Xdesc, Xref)
- subroutine IXFregroup\_dataset\_1d (wres, w1, param, status)
- subroutine IXFshift\_dataset\_1d (wres, w1, status, shift)
- subroutine setup\_binary\_op\_dataset\_1d (wres, w1, w2, status)
- subroutine setup\_unary\_op\_dataset\_1d (wres, w1, status)
- subroutine finish\_op\_dataset\_1d (wres, w1, status)

- `type(IXTdataset_1d) IXFdataset_1dPlusAAop (arg1, arg2)`
- `subroutine IXFmake_label_dataset_1d (d1d, x_label, s_label, status)`
- `subroutine IXFderiv1_dataset_1d (wres, w1, status)`
- `subroutine IXFderiv2_dataset_1d (wres, w1, status)`
- `logical x_hist (w1d)`
- `subroutine IXFcatarray_dataset_1d (array1d, dataset1d, status)`
- `subroutine setbase (d1d, name, status)`
- `subroutine IXFunits_dataset_1d (d1d, status, emode, efixed, L1, L2, theta, delay, units_out)`
- `subroutine IXFunspike_dataset_1d (d1dout, d1d, status)`

### 5.10.1 Function Documentation

**5.10.1.1** `subroutine IXMdataset_1d::finish_op_dataset_1d (type(IXTdataset_1d),intent(inout) wres, type(IXTdataset_1d),intent(in) w1, type(IXTstatus),intent(inout) status)`

Definition at line 814 of file IXMdataset\_1d.f90.

References IXFcheck\_dataset\_1d().

Referenced by IXFderiv1\_dataset\_1d(), IXFderiv2\_dataset\_1d(), and IXFunspike\_dataset\_1d().

Here is the call graph for this function:

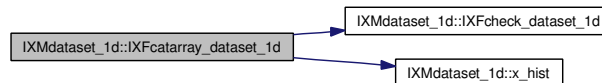


**5.10.1.2** `subroutine IXMdataset_1d::IXFcatarray_dataset_1d (type(IXTdataset_1d),dimension(:),intent(in) array1d, type(IXTdataset_1d),intent(out) dataset1d, type(IXTstatus),intent(inout) status)`

Definition at line 1032 of file IXMdataset\_1d.f90.

References IXFcheck\_dataset\_1d(), and x\_hist().

Here is the call graph for this function:



**5.10.1.3** `subroutine IXMdataset_1d::IXFcheck_dataset_1d (type(IXTdataset_1d),intent(in) w1, type(IXTStatus),intent(inout) status)`

Definition at line 492 of file IXMdataset\_1d.f90.

Referenced by `finish_op_dataset_1d()`, `IXFcatarray_dataset_1d()`, `IXFderiv1_dataset_1d()`, `IXFderiv2_dataset_1d()`, `IXFrebin_dataset_1d()`, `IXFrebunch_dataset_1d()`, `IXFregroup_dataset_1d()`, `IXFset_dataset_1d()`, and `IXFshift_dataset_1d()`.

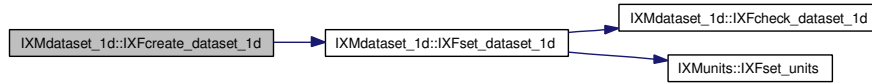
**5.10.1.4** subroutine `IXMdataset_1d::IXFcreate_dataset_1d` (`type(IXTdataset_1d)`,`intent(out) dataset_1d`, `character(len=*)`,`intent(in) title`, `real(dp)`,`dimension(:)`,`intent(in) signal`, `real(dp)`,`dimension(:)` ,`intent(in) error`, `type(IXTunits)`,`intent(in) s_units`, `real(dp)`,`dimension(:)` ,`intent(in) x`, `type(IXTunits)`,`intent(in) x_units`, `logical`,`intent(in) x_distribution`, `type(IXTstatus)`,`intent(inout) status`)

Definition at line 355 of file `IXMdataset_1d.f90`.

References `IXFset_dataset_1d()`.

Referenced by `IXFcreatexye_dataset_1d()`, and `IXMdataset_2d::IXFexpand_arrayd1d_dataset_2d()`.

Here is the call graph for this function:

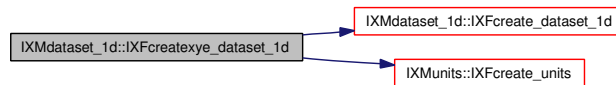


**5.10.1.5** subroutine `IXMdataset_1d::IXFcreatexye_dataset_1d` (`type(IXTdataset_1d)`,`intent(inout) dataset_1d`, `real(dp)`,`dimension(:)`,`intent(in) x`, `real(dp)`,`dimension(:)`,`intent(in) signal`, `real(dp)`,`dimension(:)` ,`intent(in) error`, `type(IXTstatus)`,`intent(inout) status`)

Definition at line 393 of file `IXMdataset_1d.f90`.

References `IXFcreate_dataset_1d()`, and `IXMunits::IXFcreate_units()`.

Here is the call graph for this function:



**5.10.1.6** `type(IXTdataset_1d)` `IXMdataset_1d::IXFdataset_1dPlusAAop` (`type(IXTdataset_1d)`,`intent(in) arg1`, `type(IXTdataset_1d)`,`intent(in) arg2`)

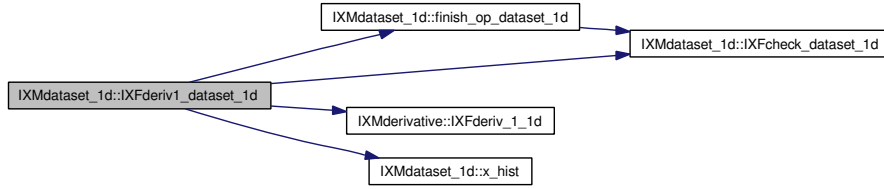
Definition at line 835 of file `IXMdataset_1d.f90`.

**5.10.1.7** subroutine `IXMdataset_1d::IXFderiv1_dataset_1d` (`type(IXTdataset_1d)`,`intent(out) wres`, `type(IXTdataset_1d)`,`intent(in) w1`, `type(IXTstatus)`,`intent(inout) status`)

Definition at line 952 of file `IXMdataset_1d.f90`.

References `finish_op_dataset_1d()`, `IXFcheck_dataset_1d()`, `IXMderivative::IXFderiv_1_1d()`, and `x_hist()`.

Here is the call graph for this function:

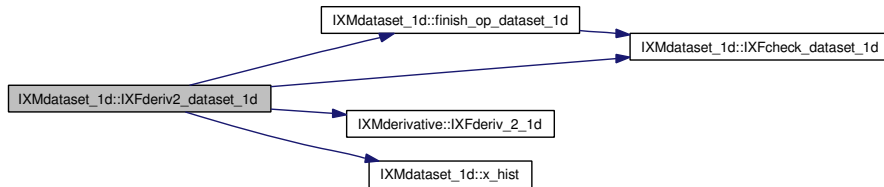


#### 5.10.1.8 subroutine `IXMdataset_1d::IXFderiv2_dataset_1d` (`type(IXTdataset_1d)`, `intent(out) wres`, `type(IXTdataset_1d)`, `intent(in) w1`, `type(IXTstatus)`, `intent(inout) status`)

Definition at line 985 of file `IXMdataset_1d.f90`.

References `finish_op_dataset_1d()`, `IXFcheck_dataset_1d()`, `IXMderivative::IXFderiv_2_1d()`, and `x_hist()`.

Here is the call graph for this function:



#### 5.10.1.9 subroutine `IXMdataset_1d::IXFdestroy_dataset_1d` (`type(IXTdataset_1d) w1d`, `type(IXTstatus) status`)

Definition at line 235 of file `IXMdataset_1d.f90`.

#### 5.10.1.10 subroutine `IXMdataset_1d::IXFget_alloc_dataset_1d` (`type(IXTdataset_1d)`, `intent(in) w1`, `type(IXTstatus)`, `intent(inout) status`, `character(len=*)`, `intent(out)`, `optional title`, `real(dp)`, `dimension(:)`, `optional, allocatable signal`, `real(dp)`, `dimension(:)`, `optional, allocatable error`, `type(IXTunits)`, `intent(out)`, `optional s_units`, `real(dp)`, `dimension(:)`, `optional, allocatable x`, `type(IXTunits)`, `intent(out)`, `optional x_units`, `logical`, `intent(out)`, `optional x_distribution`, `type(IXTdataset_1d)`, `intent(out)`, `optional wout`)

Definition at line 293 of file `IXMdataset_1d.f90`.

References `IXFget_dataset_1d()`.

Here is the call graph for this function:



**5.10.1.11** subroutine IXMdataset\_1d::IXFget\_dataset\_1d (type(IXTdataset\_1d),intent(in) *dataset\_1d*, type(IXTstatus),intent(inout) *status*, character(len=\*),intent(out),optional *title*, real(dp),dimension(:),intent(out),optional *signal*, real(dp),dimension(:),intent(out),optional *error*, type(IXTunits),intent(out),optional *s\_units*, real(dp),dimension(:) ,intent(out),optional *x*, type(IXTunits),intent(out),optional *x\_units*, logical,intent(out),optional *x\_distribution*, type(IXTdataset\_1d),intent(out),optional *wout*)

Definition at line 260 of file IXMdataset\_1d.f90.

Referenced by IXFget\_alloc\_dataset\_1d().

**5.10.1.12** subroutine IXMdataset\_1d::IXFget\_ptr\_dataset\_1d (type(IXTdataset\_1d),intent(in) *w1*, real(dp),dimension(:) ,intent(out),optional,pointer *x*, real(dp),dimension(:) ,intent(out),optional,pointer *signal*, real(dp),dimension(:) ,intent(out),optional,pointer *error*)

Definition at line 220 of file IXMdataset\_1d.f90.

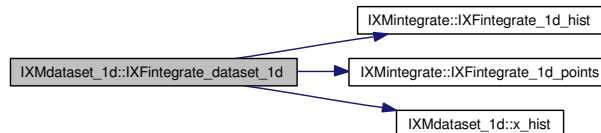
Referenced by IXMdataset\_2d::integrate\_x\_arr\_dataset\_2d(), IXMdataset\_2d::integrate\_x\_dataset\_2d(), IXMisis\_raw\_file::IXFget\_spectrum\_d1(), and IXMdataset\_2d::IXFintegrate\_y\_dataset\_2d().

**5.10.1.13** subroutine IXMdataset\_1d::IXFintegrate\_dataset\_1d (type(IXTdatum),intent(out) *ires*, type(IXTdataset\_1d),intent(in) *w1*, real(dp),intent(in) *xmin\_in*, real(dp),intent(in) *xmax\_in*, type(IXTstatus),intent(inout) *status*)

Definition at line 546 of file IXMdataset\_1d.f90.

References IXMunits\_utils::err, IXMintegrate::IXFintegrate\_1d\_hist(), IXMintegrate::IXFintegrate\_1d\_points(), and x\_hist().

Here is the call graph for this function:



**5.10.1.14** subroutine IXMdataset\_1d::IXFmake\_dataset\_1d (type(IXTdataset\_1d),intent(inout) *dataset\_1d*, integer(i4b),intent(in) *nx*, logical,intent(in) *dist*, logical,intent(in) *hist*, type(IXTstatus),intent(inout) *status*)

Definition at line 324 of file IXMdataset\_1d.f90.

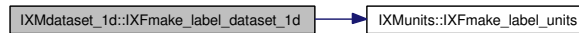
Referenced by IXMdataset\_2d::integrate\_x\_arr\_dataset\_2d(), IXMdataset\_2d::integrate\_x\_dataset\_2d(), IXMisis\_raw\_file::IXFget\_spectrum\_d1(), and IXMdataset\_2d::IXFintegrate\_y\_dataset\_2d().

**5.10.1.15** subroutine IXMdataset\_1d::IXFmake\_label\_dataset\_1d  
 (type(IXTdataset\_1d),intent(in) *d1d*, character(len=long\_len),intent(out) *x\_label*, character(len=long\_len),intent(out) *s\_label*, type(IXTstatus) *status*)

Definition at line 845 of file IXMdataset\_1d.f90.

References IXMunits::IXFmake\_label\_units().

Here is the call graph for this function:



**5.10.1.16** subroutine IXMdataset\_1d::IXFoperation\_run\_dataset\_1d  
 (type(IXToperation),intent(inout) *op*, character(len=\*),intent(in) *field*, type(IXTdataset\_1d),intent(inout) *arg*, type(IXTstatus),intent(inout) *status*)

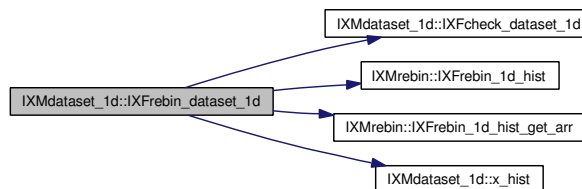
Definition at line 469 of file IXMdataset\_1d.f90.

**5.10.1.17** subroutine IXMdataset\_1d::IXFrebin\_dataset\_1d (type(IXTdataset\_1d),intent(out) *wres*, type(IXTstatus),intent(inout) *status*, type(IXTdataset\_1d),intent(in) *w2*, real(dp),dimension(:),intent(in),optional *Xdesc*, type(IXTdataset\_1d),intent(in),optional *Xref*)

Definition at line 604 of file IXMdataset\_1d.f90.

References IXFcheck\_dataset\_1d(), IXMrebin::IXFrebin\_1d\_hist(), IXMrebin::IXFrebin\_1d\_hist\_get\_arr(), and x\_hist().

Here is the call graph for this function:

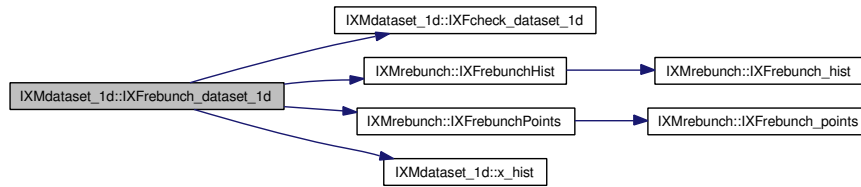


**5.10.1.18** subroutine IXMdataset\_1d::IXFrebunch\_dataset\_1d  
 (type(IXTdataset\_1d),intent(out) *wres*, type(IXTdataset\_1d),intent(in) *w1*, integer(i4b),intent(in) *nbunch*, type(IXTstatus),intent(inout) *status*)

Definition at line 569 of file IXMdataset\_1d.f90.

References IXFcheck\_dataset\_1d(), IXMrebunch::IXFrebunchHist(), IXMrebunch::IXFrebunchPoints(), and x\_hist().

Here is the call graph for this function:

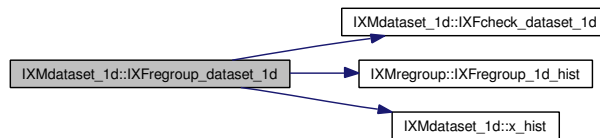


#### 5.10.1.19 subroutine IXMdataset\_1d::IXFregroup\_dataset\_1d (type(IXTdataset\_1d),intent(out) wres, type(IXTdataset\_1d),intent(in) w1, real(dp),dimension(3) ,intent(in) param, type(IXTstatus),intent(inout) status)

Definition at line 667 of file IXMdataset\_1d.f90.

References IXFcheck\_dataset\_1d(), IXMregroup::IXFregroup\_1d\_hist(), and x\_hist().

Here is the call graph for this function:



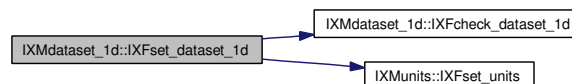
#### 5.10.1.20 subroutine IXMdataset\_1d::IXFset\_dataset\_1d (type(IXTdataset\_1d),intent(inout) dataset\_1d, type(IXTstatus),intent(inout) status, character(len=\*),intent(in),optional title, real(dp),dimension(:),intent(in),optional signal, real(dp),dimension(:) ,intent(in),optional error, type(IXTunits),intent(in),optional s\_units, real(dp),dimension(:) ,intent(in),optional x, type(IXTunits),intent(in),optional x\_units, logical,intent(in),optional x\_distribution, type(IXTdataset\_1d),intent(in),optional ref)

Definition at line 419 of file IXMdataset\_1d.f90.

References IXFcheck\_dataset\_1d(), and IXMunits::IXFset\_units().

Referenced by IXMdataset\_2d::integrate\_x\_arr\_dataset\_2d(), IXMdataset\_2d::integrate\_x\_dataset\_2d(), IXFcreate\_dataset\_1d(), IXMisis\_raw\_file::IXFget\_spectrum\_d1(), IXMdataset\_2d::IXFintegrate\_y\_dataset\_2d(), and IXFunits\_dataset\_1d().

Here is the call graph for this function:

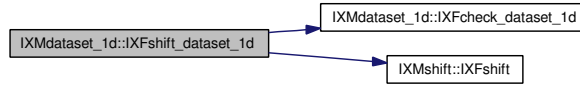


**5.10.1.21** subroutine `IXMdataset_1d::IXFshift_dataset_1d` (`type(IXTdataset_1d)`,`intent(out) wres`, `type(IXTdataset_1d)`,`intent(in) w1`, `type(IXTstatus)`,`intent(inout) status`, `real(dp)`,`intent(in) shift`)

Definition at line 708 of file `IXMdataset_1d.f90`.

References `IXFcheck_dataset_1d()`, and `IXMshift::IXFshift()`.

Here is the call graph for this function:

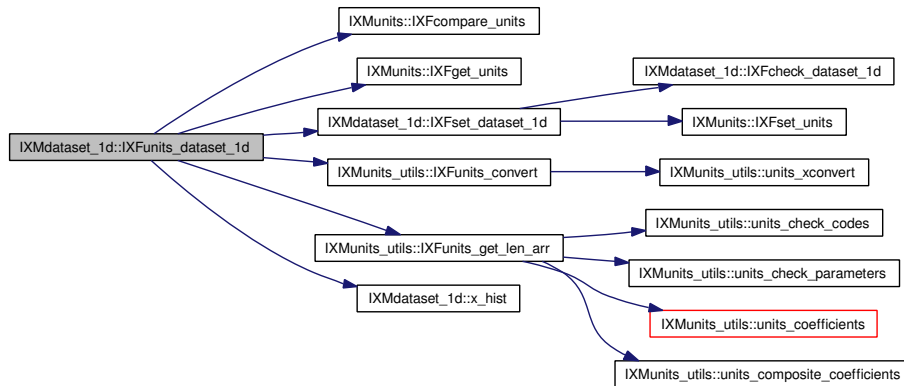


**5.10.1.22** subroutine `IXMdataset_1d::IXFunits_dataset_1d` (`type(IXTdataset_1d)`,`intent(inout) d1d`, `type(IXTstatus)`,`intent(inout) status`, `integer(i4b)`,`intent(in) emode`, `real(dp)`,`intent(in) efixed`, `real(dp)`,`intent(in) L1`, `real(dp)`,`intent(in) L2`, `real(dp)`,`intent(in) theta`, `real(dp)`,`intent(in) delay`, `type(IXTunits)`,`intent(in) units_out`)

Definition at line 1091 of file `IXMdataset_1d.f90`.

References `IXMunits::IXFcompare_units()`, `IXMunits::IXFget_units()`, `IXFset_dataset_1d()`, `IXMunits_utils::IXFunits_convert()`, `IXMunits_utils::IXFunits_get_len_arr()`, and `x_hist()`.

Here is the call graph for this function:



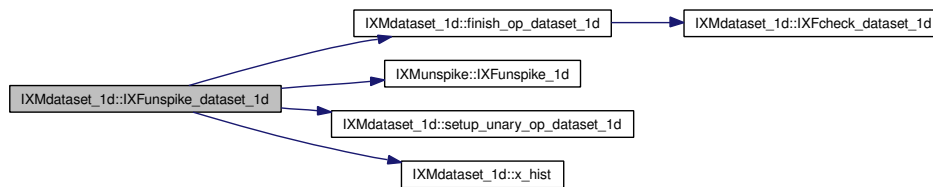
**5.10.1.23** subroutine `IXMdataset_1d::IXFunspike_dataset_1d` (`type(IXTdataset_1d)`,`intent(out) d1dout`, `type(IXTdataset_1d)`,`intent(in) d1d`, `type(IXTstatus)`,`intent(inout) status`)

Definition at line 1134 of file `IXMdataset_1d.f90`.

References `finish_op_dataset_1d()`, `IXMunspike::IXFunspike_1d()`, `setup_unary_op_dataset_1d()`, and `x_hist()`.

Here is the call graph for this function:





#### 5.10.1.24 subroutine IXMdataset\_1d::setbase (type(IXTdataset\_1d) *d1d*, character(len=\*) *name*, type(IXTstatus) *status*)

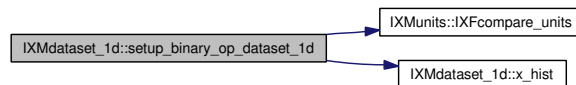
Definition at line 1081 of file IXMdataset\_1d.f90.

#### 5.10.1.25 subroutine IXMdataset\_1d::setup\_binary\_op\_dataset\_1d (type(IXTdataset\_1d),intent(out) *wres*, type(IXTdataset\_1d),intent(in) *w1*, type(IXTdataset\_1d),intent(in) *w2*, type(IXTstatus),intent(inout) *status*)

Definition at line 736 of file IXMdataset\_1d.f90.

References IXMunits::IXFcompare\_units(), and x\_hist().

Here is the call graph for this function:



#### 5.10.1.26 subroutine IXMdataset\_1d::setup\_unary\_op\_dataset\_1d (type(IXTdataset\_1d),intent(out) *wres*, type(IXTdataset\_1d),intent(in) *w1*, type(IXTstatus),intent(inout) *status*)

Definition at line 797 of file IXMdataset\_1d.f90.

Referenced by IXFunspike\_dataset\_1d().

#### 5.10.1.27 logical IXMdataset\_1d::x\_hist (type (IXTdataset\_1d),intent(in) *w1d*)

Definition at line 1019 of file IXMdataset\_1d.f90.

Referenced by IXMdataset\_2d::integrate\_x\_dataset\_2d(), IXFcatarray\_dataset\_1d(), IXFderiv1\_dataset\_1d(), IXMdataset\_2d::IXFderiv1x\_dataset\_2d(), IXFderiv2\_dataset\_1d(), IXMdataset\_2d::IXFderiv2x\_dataset\_2d(), IXMdataset\_2d::IXFeffc\_dataset\_2d(), IXFintegrate\_dataset\_1d(), IXMdataset\_2d::IXFintegrate\_xy\_dataset\_2d(), IXMdataset\_2d::IXFintegrate\_y\_dataset\_2d(), IXMdataset\_2d::IXFintXsumY\_dataset\_2d(), IXFrebin\_dataset\_1d(), IXMdataset\_2d::IXFrebin\_x\_dataset\_2d(), IXMdataset\_2d::IXFrebin\_xy\_dataset\_2d(), IXFrebunch\_dataset\_1d(), IXMdataset\_2d::IXFrebunch\_x\_dataset\_2d(), IXMdataset\_2d::IXFrebunch\_xy\_dataset\_2d(), IXFregroup\_dataset\_1d(), IXMdataset\_2d::IXFregroup\_x\_dataset\_2d(), IXMdataset\_2d::IXFregroup\_xy\_dataset\_2d(), IXFunits\_dataset\_1d(), IXFunspike\_dataset\_1d(), IXMdataset\_2d::IXFunspike\_dataset\_2d(), setup\_

`binary_op_dataset_1d()`, `IXMdataset_2d::setup_binary_op_dataset_2d()`, `IXMdataset_2d::units_array()`, `IXMdataset_2d::units_array_array()`, and `IXMdataset_2d::units_single_array()`.

## 5.11 IXMdataset\_2d Namespace Reference

### Classes

- struct IXTdataset\_2d
- interface IXFintegrate\_x\_dataset\_2d
- interface IXFplus\_dataset\_2d
- interface IXFplus
- interface IXFminus\_dataset\_2d
- interface IXFminus
- interface IXFtimes\_dataset\_2d
- interface IXFtimes
- interface IXFdivide\_dataset\_2d
- interface IXFdivide
- interface IXFpower\_dataset\_2d
- interface IXFpower
- interface IXFplus\_X\_dataset\_2d
- interface IXFplus\_X
- interface IXFminus\_X\_dataset\_2d
- interface IXFminus\_X
- interface IXFtimes\_X\_dataset\_2d
- interface IXFtimes\_X
- interface IXFdivide\_X\_dataset\_2d
- interface IXFdivide\_X
- interface IXFplus\_Y\_dataset\_2d
- interface IXFplus\_Y
- interface IXFminus\_Y\_dataset\_2d
- interface IXFminus\_Y
- interface IXFtimes\_Y\_dataset\_2d
- interface IXFtimes\_Y
- interface IXFdivide\_Y\_dataset\_2d
- interface IXFdivide\_Y
- interface IXFexp
- interface IXFlog
- interface IXFsin
- interface IXFcos
- interface IXFtan
- interface IXFsinh
- interface IXFcosh
- interface IXFtanh
- interface IXFunits\_dataset\_2d
- interface IXFunits
- interface IXFunspike

## Functions

- subroutine IXFoperation\_run\_dataset\_2d (op, field, arg, status)
- subroutine IXFget\_ptr\_dataset\_2d (w1, x, y, signal, error)
- subroutine IXFget\_alloc\_dataset\_2d (w1, status, title, signal, error, s\_units, x, x\_units, x\_distribution, y, y\_units, y\_distribution, wout)
- subroutine IXFget\_dataset\_2d (dataset\_2d, status, title, signal, error, s\_units, x, x\_units, x\_distribution, y, y\_units, y\_distribution, wout)
- subroutine IXFmake\_dataset\_2d (dataset\_2d, nx, ny, xdist, xhist, ydist, yhist, status)
- subroutine IXFcreate\_dataset\_2d (dataset\_2d, title, signal, error, s\_units, x, x\_units, x\_distribution, y, y\_units, y\_distribution, status)
- subroutine IXFcreatexyze\_dataset\_2d (dataset\_2d, x, y, signal, error, status)
- subroutine IXFset\_dataset\_2d (dataset\_2d, status, title, signal, error, s\_units, x, x\_units, x\_distribution, y, y\_units, y\_distribution, ref)
- subroutine IXFcheck\_dataset\_2d (w1, status)
- subroutine integrate\_x\_dataset\_2d (wres, w1, x1, x2, status)
- subroutine integrate\_x\_arr\_dataset\_2d (wres, d2d, x1, x2, status)
- subroutine IXFintegrate\_y\_dataset\_2d (wres, w1, y1, y2, status)
- subroutine IXFintegrate\_xy\_dataset\_2d (ires, w2D, xmin, xmax, ymin, ymax, status)
- subroutine IXFintXsumY\_dataset\_2d (ires, w2D, xmin, xmax, y\_lo, y\_hi, status)
- subroutine IXFshift\_dataset\_2d (wres, w1, status, shift\_x, shift\_y)
- subroutine setup\_binary\_op\_dataset\_2d (wres, w1, w2, status)
- subroutine setup\_unary\_op\_dataset\_2d (wres, w1, status)
- subroutine finish\_op\_dataset\_2d (wres, w1, status)
- subroutine IXFrebin\_x\_dataset\_2d (wres, status, w2, Xdesc, Xref)
- subroutine IXFrebin\_y\_dataset\_2d (wres, status, w2, Ydesc, Yref)
- subroutine IXFrebin\_xy\_dataset\_2d (wres, status, w2, Xdesc, Xref, Ydesc, Yref)
- subroutine IXFrebunch\_x\_dataset\_2d (wres, w2, nbunch, status)
- subroutine IXFrebunch\_y\_dataset\_2d (wres, w2, nbunch, status)
- subroutine IXFrebunch\_xy\_dataset\_2d (wres, w2, Xbunch, Ybunch, status)
- subroutine IXFregroup\_x\_dataset\_2d (wres, w2, param, status)
- subroutine IXFregroup\_y\_dataset\_2d (wres, w2, param, status)
- subroutine IXFregroup\_xy\_dataset\_2d (wres, w2, Xparam, Yparam, status)
- subroutine IXFderiv1x\_dataset\_2d (wres, w1, status)
- subroutine IXFderiv1y\_dataset\_2d (wres, w1, status)
- subroutine IXFderiv2x\_dataset\_2d (wres, w1, status)
- subroutine IXFderiv2y\_dataset\_2d (wres, w1, status)
- subroutine IXFeffic\_dataset\_2d (d2d, atms, ki, status)
- subroutine IXFdestroy\_dataset\_2d (w2d, status)
- subroutine IXFexpand\_arrayd1d\_dataset\_2d (d2d, status, arrayd1d, list)
- subroutine IXFexpand\_arrayd2d\_dataset\_2d (d2d, status, arrayd2d, list)
- subroutine units\_single\_array (d2d, arrayd2d, status, emode, efixed, L1, L2, theta, delay, units\_out)
- subroutine units\_array\_array (d2d\_in, d2d\_out, status, emode, efixed, L1, L2, theta, delay, units\_out)
- subroutine units\_common (d2d\_in, i, d2d\_out, emode, efixed, L1, L2, theta, delay, units\_out, status)

- subroutine `units_array` (`arrayd2d`, `status`, `emode`, `efixed`, `L1`, `L2`, `theta`, `delay`, `units_out`)
- subroutine `IXFcontract_arrayd2d_dataset_2d` (`arrayd2d`, `d2d`, `status`)
- subroutine `IXFgetei_dataset_2d` (`d2d`, `Ei`, `Lm1`, `Lm2`, `status`)
- subroutine `IXFmoments_dataset_2d` (`d2d`, `index`, `Tmin`, `Tmax`, `T_M`, `A_M`, `status`)
- subroutine `IXFunspike_dataset_2d` (`d2dout`, `d2d`, `status`)
- subroutine `IXFmake_label_dataset_2d` (`d2d`, `x_label`, `s_label`, `status`)
- logical `x_hist` (`w1d`)
- logical `y_hist` (`w1d`)

### 5.11.1 Function Documentation

**5.11.1.1** subroutine `IXMdataset_2d::finish_op_dataset_2d` (`type(IXTdataset_2d)`,`intent(inout)` *wres*, `type(IXTdataset_2d)`,`intent(in)` *w1*, `type(IXTstatus)`,`intent(inout)` *status*)

Definition at line 983 of file `IXMdataset_2d.f90`.

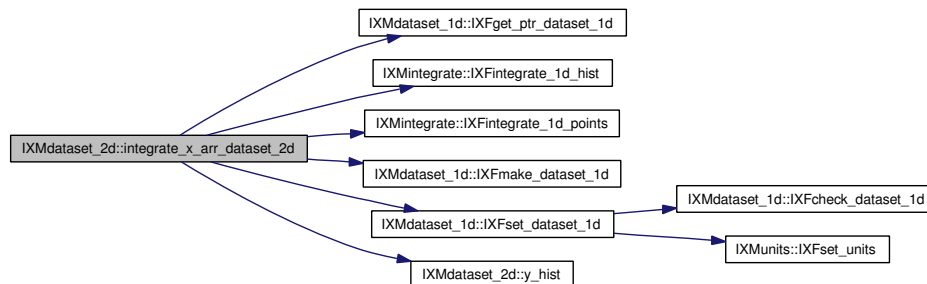
Referenced by `IXFderiv1x_dataset_2d()`, `IXFderiv1y_dataset_2d()`, `IXFderiv2x_dataset_2d()`, `IXFderiv2y_dataset_2d()`, and `IXFunspike_dataset_2d()`.

**5.11.1.2** subroutine `IXMdataset_2d::integrate_x_arr_dataset_2d` (`type(IXTdataset_1d)`,`intent(out)` *wres*, `type(IXTdataset_2d)`,`intent(in)` *d2d*, `real(dp)`,`dimension(:)`,`intent(in)` *x1*, `real(dp)`,`dimension(:)` ,`intent(in)` *x2*, `type(IXTstatus)`,`intent(inout)` *status*)

Definition at line 696 of file `IXMdataset_2d.f90`.

References `IXMdataset_1d::IXFget_ptr_dataset_1d()`, `IXMintegrate::IXFintegrate_1d_hist()`, `IXMintegrate::IXFintegrate_1d_points()`, `IXMdataset_1d::IXFmake_dataset_1d()`, `IXMdataset_1d::IXFset_dataset_1d()`, and `y_hist()`.

Here is the call graph for this function:

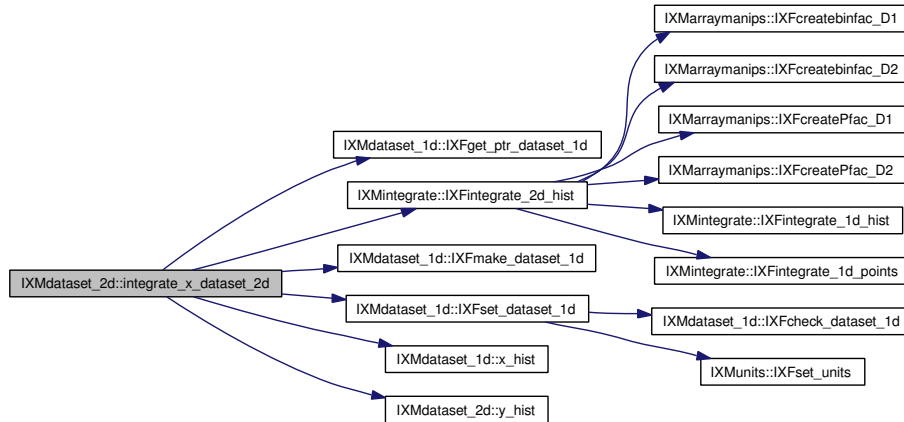


**5.11.1.3** subroutine `IXMdataset_2d::integrate_x_dataset_2d` (`type(IXTdataset_1d)`,`intent(out)` *wres*, `type(IXTdataset_2d)`,`intent(in)` *w1*, `real(dp)`,`intent(in)` *x1*, `real(dp)`,`intent(in)` *x2*, `type(IXTstatus)`,`intent(inout)` *status*)

Definition at line 658 of file `IXMdataset_2d.f90`.

References IXMdataset\_1d::IXFget\_ptr\_dataset\_1d(), IXMintegrate::IXFintegrate\_2d\_hist(), IXMdataset\_1d::IXFmake\_dataset\_1d(), IXMdataset\_1d::IXFset\_dataset\_1d(), IXMdataset\_1d::x\_hist(), and y\_hist().

Here is the call graph for this function:



#### 5.11.1.4 subroutine IXMdataset\_2d::IXFcheck\_dataset\_2d (type(IXTdataset\_2d),intent(in) w1, type(IXTstatus),intent(inout) status)

Definition at line 592 of file IXMdataset\_2d.f90.

Referenced by IXFderiv1x\_dataset\_2d(), IXFderiv1y\_dataset\_2d(), IXFderiv2x\_dataset\_2d(), IXFderiv2y\_dataset\_2d(), IXFrebin\_x\_dataset\_2d(), IXFrebin\_xy\_dataset\_2d(), IXFrebin\_y\_dataset\_2d(), IXFrebunch\_x\_dataset\_2d(), IXFrebunch\_xy\_dataset\_2d(), IXFrebunch\_y\_dataset\_2d(), IXFregroup\_x\_dataset\_2d(), IXFregroup\_xy\_dataset\_2d(), IXFregroup\_y\_dataset\_2d(), IXFset\_dataset\_2d(), and IXFshift\_dataset\_2d().

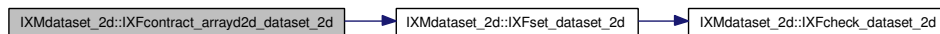
#### 5.11.1.5 subroutine IXMdataset\_2d::IXFcontract\_arrayd2d\_dataset\_2d (type(IXTdataset\_2d),dimension(:),intent(in) arrayd2d, type(IXTdataset\_2d),intent(out) d2d, type(IXTstatus),intent(inout) status)

Definition at line 2155 of file IXMdataset\_2d.f90.

References IXFset\_dataset\_2d().

Referenced by IXMdata::IXFrebin\_data(), IXMdata::IXFunits\_rebin\_data(), and IXMdata::popunitsrebin\_datasets().

Here is the call graph for this function:



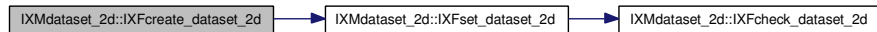
**5.11.1.6** subroutine IXMdataset\_2d::IXFcreate\_dataset\_2d (type(IXTdataset\_2d),intent(out) *dataset\_2d*, character(len=\*) ,intent(in) *title*, real(dp),dimension(:,:),intent(in) *signal*, real(dp),dimension(:,:), ,intent(in) *error*, type(IXTunits),intent(in) *s\_units*, real(dp),dimension(:,:),intent(in) *x*, type(IXTunits),intent(in) *x\_units*, logical,intent(in) *x\_distribution*, real(dp),dimension(:,:),intent(in) *y*, type(IXTunits),intent(in) *y\_units*, logical,intent(in) *y\_distribution*, type(IXTstatus),intent(inout) *status*)

Definition at line 467 of file IXMdataset\_2d.f90.

References IXFset\_dataset\_2d().

Referenced by IXFcreateyze\_dataset\_2d(), and IXFexpand\_arrayd2d\_dataset\_2d().

Here is the call graph for this function:

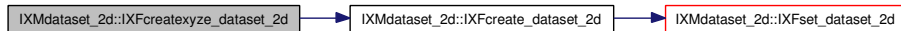


**5.11.1.7** subroutine IXMdataset\_2d::IXFcreateyze\_dataset\_2d (type(IXTdataset\_2d),intent(out) *dataset\_2d*, real(dp),dimension(:,:),intent(in) *x*, real(dp),dimension(:,:),intent(in) *y*, real(dp),dimension(:,:),intent(in) *signal*, real(dp),dimension(:,:), ,intent(in) *error*, type(IXTstatus),intent(inout) *status*)

Definition at line 508 of file IXMdataset\_2d.f90.

References IXFcreate\_dataset\_2d().

Here is the call graph for this function:

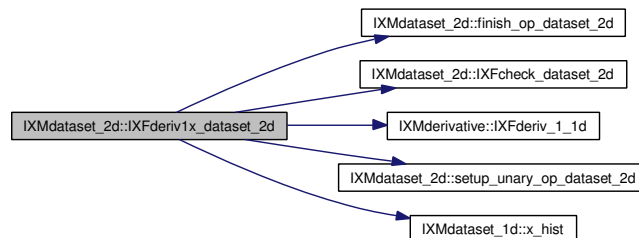


**5.11.1.8** subroutine IXMdataset\_2d::IXFderiv1x\_dataset\_2d (type(IXTdataset\_2d),intent(out) *wres*, type(IXTdataset\_2d),intent(in) *w1*, type(IXTstatus),intent(inout) *status*)

Definition at line 1641 of file IXMdataset\_2d.f90.

References finish\_op\_dataset\_2d(), IXFcheck\_dataset\_2d(), IXMderivative::IXFderiv\_1\_1d(), setup\_unary\_op\_dataset\_2d(), and IXMdataset\_1d::x\_hist().

Here is the call graph for this function:

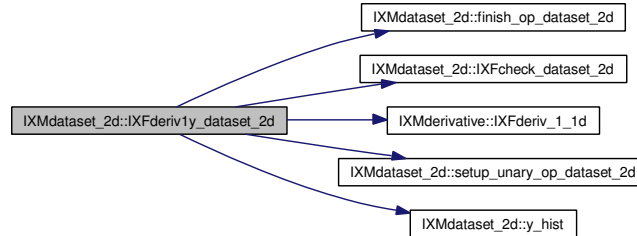


**5.11.1.9** subroutine `IXMdataset_2d::IXFderiv1y_dataset_2d` (type `(IXTdataset_2d),intent(out) wres`, type `(IXTdataset_2d),intent(in) w1`, type `(IXTstatus),intent(inout) status`)

Definition at line 1678 of file `IXMdataset_2d.f90`.

References `finish_op_dataset_2d()`, `IXFcheck_dataset_2d()`, `IXMderivative::IXFderiv_1_1d()`, `setup_unary_op_dataset_2d()`, and `y_hist()`.

Here is the call graph for this function:

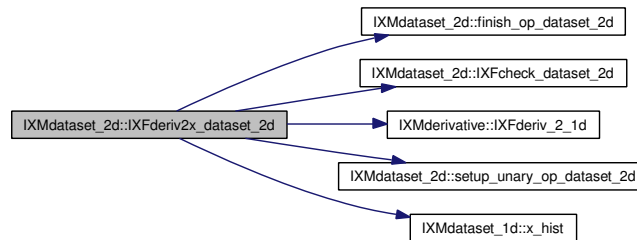


**5.11.1.10** subroutine `IXMdataset_2d::IXFderiv2x_dataset_2d` (type `(IXTdataset_2d),intent(out) wres`, type `(IXTdataset_2d),intent(in) w1`, type `(IXTstatus),intent(inout) status`)

Definition at line 1716 of file `IXMdataset_2d.f90`.

References `finish_op_dataset_2d()`, `IXFcheck_dataset_2d()`, `IXMderivative::IXFderiv_2_1d()`, `setup_unary_op_dataset_2d()`, and `IXMdataset_1d::x_hist()`.

Here is the call graph for this function:



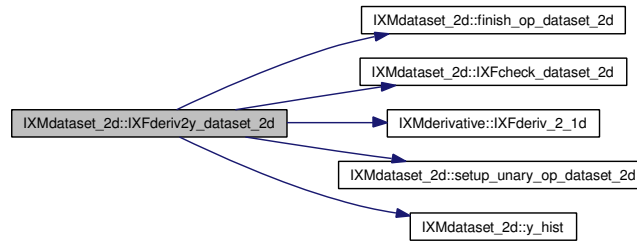
**5.11.1.11** subroutine `IXMdataset_2d::IXFderiv2y_dataset_2d` (type `(IXTdataset_2d),intent(out) wres`, type `(IXTdataset_2d),intent(in) w1`, type `(IXTstatus),intent(inout) status`)

Definition at line 1753 of file `IXMdataset_2d.f90`.

References `finish_op_dataset_2d()`, `IXFcheck_dataset_2d()`, `IXMderivative::IXFderiv_2_1d()`, `setup_unary_op_dataset_2d()`, and `y_hist()`.

Here is the call graph for this function:





**5.11.1.12** subroutine `IXMdataset_2d::IXFdestroy_dataset_2d` (`type(IXTdataset_2d)`, `intent(inout) w2d`, `type(IXTstatus)`, `intent(inout) status`)

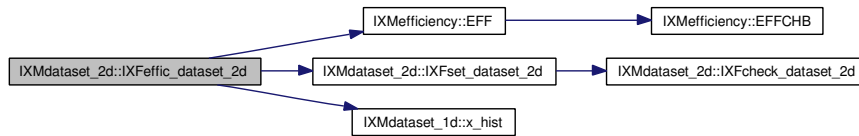
Definition at line 1827 of file `IXMdataset_2d.f90`.

**5.11.1.13** subroutine `IXMdataset_2d::IXFeffic_dataset_2d` (`type(IXTdataset_2d)`, `intent(inout) d2d`, `real(dp)`, `intent(in) atms`, `real(dp)`, `intent(in) ki`, `type(IXTstatus)`, `intent(inout) status`)

Definition at line 1789 of file `IXMdataset_2d.f90`.

References `IXMefficiency::EFF()`, `IXFset_dataset_2d()`, and `IXMdataset_1d::x_hist()`.

Here is the call graph for this function:

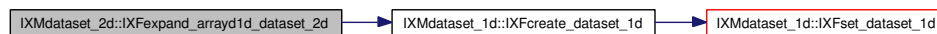


**5.11.1.14** subroutine `IXMdataset_2d::IXFexpand_array1d_dataset_2d` (`type(IXTdataset_2d)`, `intent(in) d2d`, `type(IXTstatus)`, `intent(inout) status`, `type(IXTdataset_1d)`, `dimension(:)`, `allocatable array1d`, `integer(i4b)`, `dimension(:)`, `intent(in)`, `optional list`)

Definition at line 1847 of file `IXMdataset_2d.f90`.

References `IXMdataset_1d::IXFcreate_dataset_1d()`.

Here is the call graph for this function:

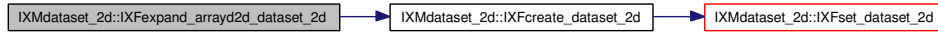


**5.11.1.15** subroutine IXMdataset\_2d::IXFexpand\_arrayd2d\_dataset\_2d  
 (type(IXTdataset\_2d),intent(in) *d2d*, type(IXTstatus),intent(inout)  
*status*, type(IXTdataset\_2d),dimension(:) ,allocatable *arrayd2d*,  
 integer(i4b),dimension(:),intent(in),optional *list*)

Definition at line 1899 of file IXMdataset\_2d.f90.

References IXFcreate\_dataset\_2d().

Here is the call graph for this function:



**5.11.1.16** subroutine IXMdataset\_2d::IXFget\_alloc\_dataset\_2d  
 (type(IXTdataset\_2d),intent(in) *w1*, type(IXTstatus),intent(inout)  
*status*, character(len=\*),intent(out),optional *title*, real(dp),dimension(:,  
 :),optional,allocatable *signal*, real(dp),dimension(:,  
 :), optional,allocatable  
*error*, type(IXTunits),intent(out),optional *s\_units*, real(dp),dimension(:  
 :),optional,allocatable *x*, type(IXTunits),intent(out),optional *x\_units*,  
 logical,intent(out),optional *x\_distribution*, real(dp),dimension(:  
 :),optional,allocatable *y*, type(IXTunits),intent(out),optional  
*y\_units*, logical,intent(out),optional *y\_distribution*,  
 type(IXTdataset\_2d),intent(out),optional *wout*)

Definition at line 343 of file IXMdataset\_2d.f90.

References IXFget\_dataset\_2d().

Referenced by IXMdata::remap\_data(), and IXMdata::sum\_data().

Here is the call graph for this function:



**5.11.1.17** subroutine IXMdataset\_2d::IXFget\_dataset\_2d (type(IXTdataset\_2d),  
 intent(in) *dataset\_2d*, type(IXTstatus),intent(inout)  
*status*, character(len=\*),intent(out),optional *title*,  
 real(dp),dimension(:,:),intent(out),optional *signal*, real(dp),dimension(:,  
 :),  
 intent(out),optional *error*, type(IXTunits),intent(out),optional  
*s\_units*, real(dp),dimension(:) ,intent(out),optional *x*,  
 type(IXTunits),intent(out),optional *x\_units*, logical,intent(out),optional  
*x\_distribution*, real(dp),dimension(:) ,intent(out),optional *y*,  
 type(IXTunits),intent(out),optional *y\_units*, logical,intent(out),optional  
*y\_distribution*, type(IXTdataset\_2d),intent(out),optional *wout*)

Definition at line 385 of file IXMdataset\_2d.f90.

Referenced by IXFget\_alloc\_dataset\_2d().

**5.11.1.18** subroutine IXMdataset\_2d::IXFget\_ptr\_dataset\_2d  
 (type(IXTdataset\_2d),intent(in) *w1*, real(dp),dimension(:)  
 ,intent(out),optional,pointer *x*, real(dp),dimension(:)  
 ,intent(out),optional,pointer *y*, real(dp),dimension(:,:)  
 ,intent(out),optional,pointer *signal*, real(dp),dimension(:,:)  
 ,intent(out),optional,pointer *error*)

Definition at line 324 of file IXMdataset\_2d.f90.

Referenced by IXMisis\_raw\_file::IXFget\_spectrum\_d2(), and IXMdata::popunitsrebin\_datasets().

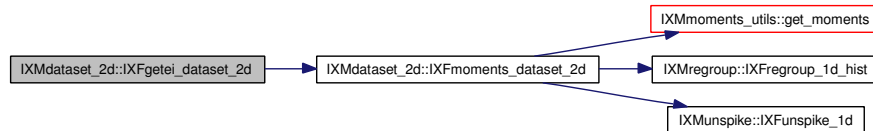
**5.11.1.19** subroutine IXMdataset\_2d::IXFgetei\_dataset\_2d (type(IXTdataset\_2d),intent(in) *d2d*, real(dp),intent(out) *Ei*, real(dp),intent(in) *Lm1*, real(dp),intent(in) *Lm2*, type(IXTstatus),intent(inout) *status*)

Definition at line 2194 of file IXMdataset\_2d.f90.

References IXFmoments\_dataset\_2d().

Referenced by IXMdata::IXFgetei\_data().

Here is the call graph for this function:

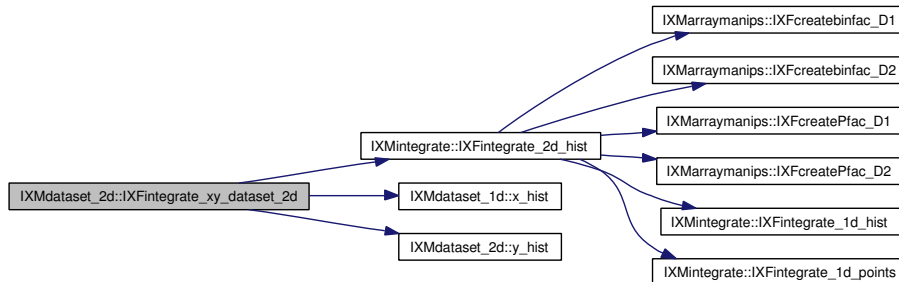


**5.11.1.20** subroutine IXMdataset\_2d::IXFintegrate\_xy\_dataset\_2d  
 (type(IXTdatum),intent(out) *ires*, type(IXTdataset\_2d),intent(in) *w2D*,  
 real(dp),intent(in) *xmin*, real(dp),intent(in) *xmax*, real(dp),intent(in)  
*ymin*, real(dp),intent(in) *ymax*, type(IXTstatus),intent(inout) *status*)

Definition at line 786 of file IXMdataset\_2d.f90.

References IXMintegrate::IXFintegrate\_2d\_hist(), IXMdataset\_1d::x\_hist(), and y\_hist().

Here is the call graph for this function:

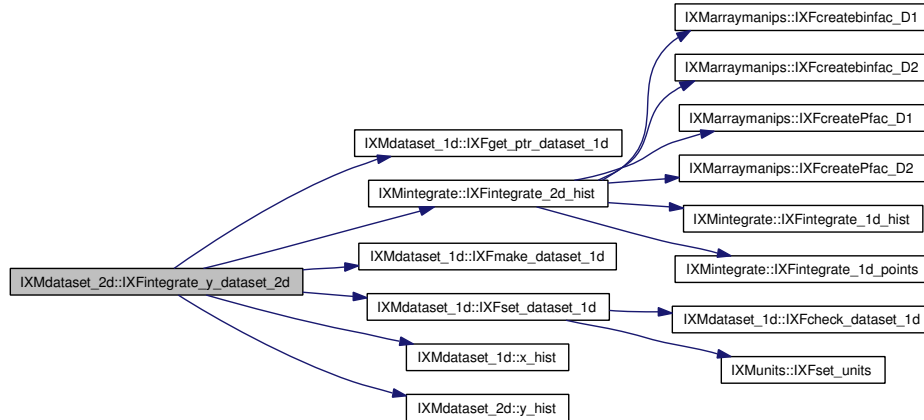


**5.11.1.21** subroutine `IXMdataset_2d::IXFintegrate_y_dataset_2d`  
 (type(`IXTdataset_1d`),intent(out) *wres*, type(`IXTdataset_2d`),intent(in) *w1*, real(dp),intent(in) *y1*, real(dp),intent(in) *y2*, type(`IXTstatus`),intent(inout) *status*)

Definition at line 748 of file `IXMdataset_2d.f90`.

References `IXMdataset_1d::IXFget_ptr_dataset_1d()`, `IXMintegrate::IXFintegrate_2d_hist()`, `IXMdataset_1d::IXFmake_dataset_1d()`, `IXMdataset_1d::IXFset_dataset_1d()`, `IXMdataset_1d::x_hist()`, and `y_hist()`.

Here is the call graph for this function:

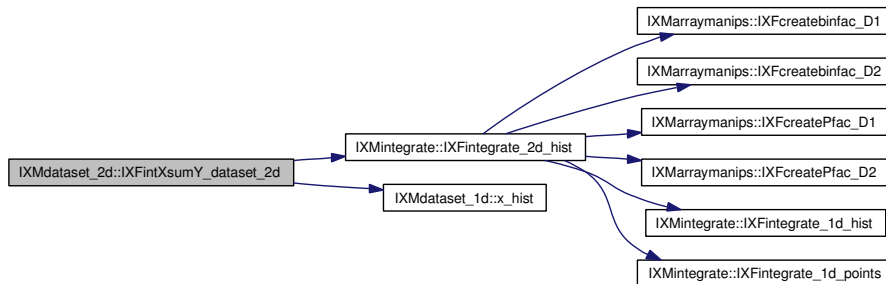


**5.11.1.22** subroutine `IXMdataset_2d::IXFintXsumY_dataset_2d`  
 (type(`IXTdatum`),intent(out) *ires*, type(`IXTdataset_2d`),intent(in) *w2D*, real(dp),intent(in) *xmin*, real(dp),intent(in) *xmax*, integer(i4b),intent(in) *y\_lo*, integer(i4b),intent(in) *y\_hi*, type(`IXTstatus`),intent(inout) *status*)

Definition at line 806 of file `IXMdataset_2d.f90`.

References `IXMintegrate::IXFintegrate_2d_hist()`, and `IXMdataset_1d::x_hist()`.

Here is the call graph for this function:



**5.11.1.23** subroutine IXMdataset\_2d::IXFmake\_dataset\_2d  
 (type(IXTdataset\_2d),intent(out) dataset\_2d, integer(i4b),intent(in) nx, integer(i4b),intent(in) ny, logical,intent(in) xdist, logical,intent(in) xhist, logical,intent(in) ydist, logical,intent(in) yhist, type(IXTstatus),intent(inout) status)

Definition at line 423 of file IXMdataset\_2d.f90.

Referenced by IXMisis\_raw\_file::IXFget\_spectrum\_d2().

**5.11.1.24** subroutine IXMdataset\_2d::IXFmake\_label\_dataset\_2d  
 (type(IXTdataset\_2d),intent(in) d2d, character(len=long\_len),intent(out) x\_label, character(len=long\_len),intent(out) s\_label, type(IXTstatus),intent(inout) status)

Definition at line 2350 of file IXMdataset\_2d.f90.

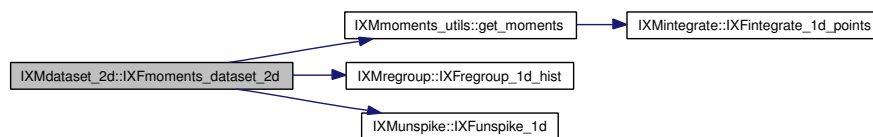
**5.11.1.25** subroutine IXMdataset\_2d::IXFmoments\_dataset\_2d  
 (type(IXTdataset\_2d),intent(in) d2d, integer(i4b),intent(in) index, real(dp),intent(in) Tmin, real(dp),intent(in) Tmax, real(dp),intent(out) T\_M, real(dp),intent(out) A\_M, type(IXTstatus),intent(inout) status)

Definition at line 2240 of file IXMdataset\_2d.f90.

References IXMmoments\_utils::get\_moments(), IXMregroup::IXFregroup\_1d\_hist(), and IXMunspike::IXFunspike\_1d().

Referenced by IXFgetei\_dataset\_2d(), and IXMdata::IXFpeakarea\_data().

Here is the call graph for this function:



**5.11.1.26** subroutine IXMdataset\_2d::IXFoperation\_run\_dataset\_2d  
 (type(IXToperation),intent(inout) op, character(len=\*),intent(in) field, type(IXTdataset\_2d),intent(inout) arg, type(IXTstatus),intent(inout) status)

Definition at line 296 of file IXMdataset\_2d.f90.

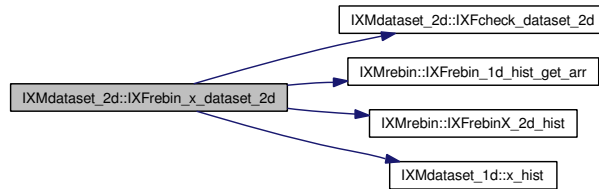
**5.11.1.27** subroutine IXMdataset\_2d::IXFrebin\_x\_dataset\_2d (type(IXTdataset\_2d),intent(out) wres, type(IXTstatus),intent(inout) status, type(IXTdataset\_2d),intent(in) w2, real(dp),dimension(:),intent(in),optional Xdesc, type(IXTdataset\_2d),intent(in),optional Xref)

Definition at line 1087 of file IXMdataset\_2d.f90.

References IXFcheck\_dataset\_2d(), IXMrebin::IXFrebin\_1d\_hist\_get\_arr(), IXMrebin::IXFrebinX\_2d\_hist(), and IXMdataset\_1d::x\_hist().

Referenced by IXMdata::IXFrebin\_data(), IXMdata::IXFunits\_rebin\_data(), and IXMdata::popunitsrebin\_datasets().

Here is the call graph for this function:

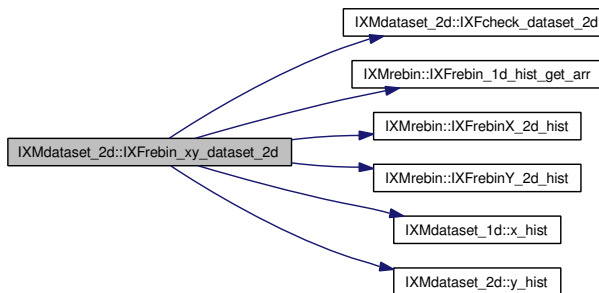


**5.11.1.28** subroutine IXMdataset\_2d::IXFrebin\_xy\_dataset\_2d (type (IXTdataset\_2d),intent(out) wres, type (IXTstatus),intent(inout) status, type (IXTdataset\_2d),intent(in) w2, real(dp),dimension(:),intent(in),optional Xdesc, type (IXTdataset\_2d),intent(in),optional Xref, real(dp),dimension(:),intent(in),optional Ydesc, type (IXTdataset\_2d),intent(in),optional Yref)

Definition at line 1238 of file IXMdataset\_2d.f90.

References IXFcheck\_dataset\_2d(), IXMrebin::IXFrebin\_1d\_hist\_get\_arr(), IXMrebin::IXFrebinX\_2d\_hist(), IXMrebin::IXFrebinY\_2d\_hist(), IXMdataset\_1d::x\_hist(), and y\_hist().

Here is the call graph for this function:

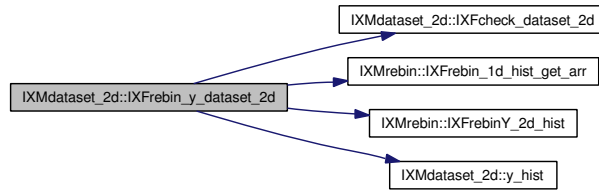


**5.11.1.29** subroutine IXMdataset\_2d::IXFrebin\_y\_dataset\_2d (type (IXTdataset\_2d),intent(out) wres, type (IXTstatus),intent(inout) status, type (IXTdataset\_2d),intent(in) w2, real(dp),dimension(:),intent(in),optional Ydesc, type (IXTdataset\_2d),intent(in),optional Yref)

Definition at line 1166 of file IXMdataset\_2d.f90.

References IXFcheck\_dataset\_2d(), IXMrebin::IXFrebin\_1d\_hist\_get\_arr(), IXMrebin::IXFrebinY\_2d\_hist(), and y\_hist().

Here is the call graph for this function:

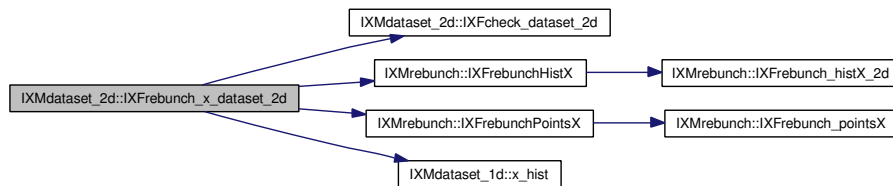


**5.11.1.30 subroutine IXMdataset\_2d::IXFrebunch\_x\_dataset\_2d**  
 (type(IXTdataset\_2d),intent(out) *wres*, type(IXTdataset\_2d),intent(in) *w2*, integer(i4b),intent(in) *nbunch*, type(IXTstatus),intent(inout) *status*)

Definition at line 1353 of file IXMdataset\_2d.f90.

References IXFcheck\_dataset\_2d(), IXMrebin::IXFrebunchHistX(), IXMrebin::IXFrebunchPointsX(), and IXMdataset\_1d::x\_hist().

Here is the call graph for this function:

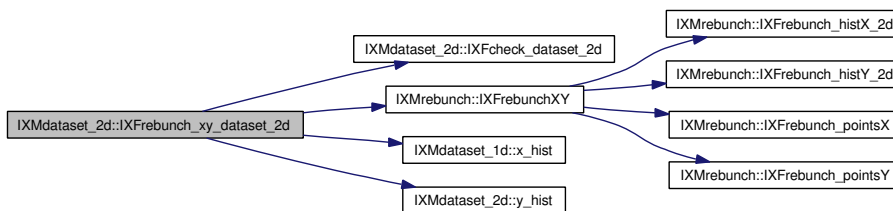


**5.11.1.31 subroutine IXMdataset\_2d::IXFrebunch\_xy\_dataset\_2d**  
 (type(IXTdataset\_2d),intent(out) *wres*, type(IXTdataset\_2d),intent(in) *w2*, integer(i4b),intent(in) *Xbunch*, integer(i4b),intent(in) *Ybunch*, type(IXTstatus),intent(inout) *status*)

Definition at line 1426 of file IXMdataset\_2d.f90.

References IXFcheck\_dataset\_2d(), IXMrebin::IXFrebunchXY(), IXMdataset\_1d::x\_hist(), and y\_hist().

Here is the call graph for this function:

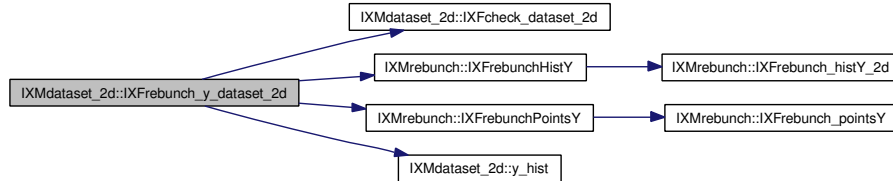


**5.11.1.32** subroutine `IXMdataset_2d::IXFrebunch_y_dataset_2d`  
 (type(`IXTdataset_2d`),intent(out) *wres*, type(`IXTdataset_2d`),intent(in) *w2*, integer(`i4b`),intent(in) *nbunch*, type(`IXTstatus`),intent(inout) *status*)

Definition at line 1390 of file `IXMdataset_2d.f90`.

References `IXFcheck_dataset_2d()`, `IXMrebunch::IXFrebunchHistY()`, `IXMrebunch::IXFrebunchPointsY()`, and `y_hist()`.

Here is the call graph for this function:

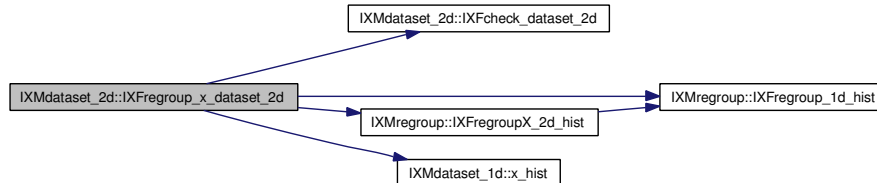


**5.11.1.33** subroutine `IXMdataset_2d::IXFregroup_x_dataset_2d`  
 (type(`IXTdataset_2d`),intent(out) *wres*, type(`IXTdataset_2d`),intent(in) *w2*, real(`dp`),dimension(3),intent(in) *param*, type(`IXTstatus`),intent(inout) *status*)

Definition at line 1460 of file `IXMdataset_2d.f90`.

References `IXFcheck_dataset_2d()`, `IXMregroup::IXFregroup_1d_hist()`, `IXMregroup::IXFregroupX_2d_hist()`, and `IXMdataset_1d::x_hist()`.

Here is the call graph for this function:



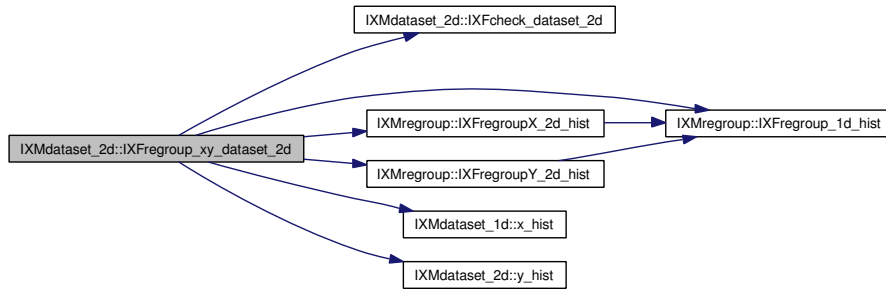
**5.11.1.34** subroutine `IXMdataset_2d::IXFregroup_xy_dataset_2d`  
 (type(`IXTdataset_2d`),intent(out) *wres*, type(`IXTdataset_2d`),intent(in) *w2*, real(`dp`),dimension(3),intent(in) *Xparam*, real(`dp`),dimension(3),intent(in) *Yparam*, type(`IXTstatus`),intent(inout) *status*)

Definition at line 1571 of file `IXMdataset_2d.f90`.

References `IXFcheck_dataset_2d()`, `IXMregroup::IXFregroup_1d_hist()`, `IXMregroup::IXFregroupX_2d_hist()`, `IXMregroup::IXFregroupY_2d_hist()`, `IXMdataset_1d::x_hist()`, and `y_hist()`.

Here is the call graph for this function:



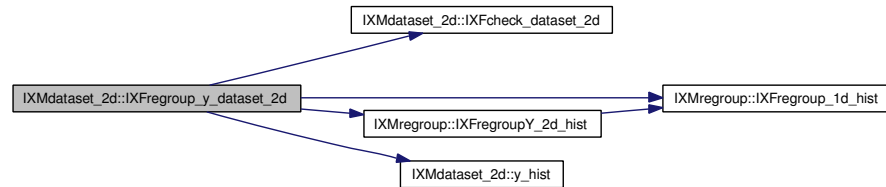


**5.11.1.35** subroutine `IXMdataset_2d::IXFgroup_y_dataset_2d`  
 (type(`IXTdataset_2d`),intent(out) *wres*, type(`IXTdataset_2d`),intent(in) *w2*, real(`dp`),dimension(3) ,intent(in) *param*, type(`IXTstatus`),intent(inout) *status*)

Definition at line 1516 of file `IXMdataset_2d.f90`.

References `IXFcheck_dataset_2d()`, `IXMregroup::IXFgroup_1d_hist()`, `IXMregroup::IXFgroupY_2d_hist()`, and `y_hist()`.

Here is the call graph for this function:



**5.11.1.36** subroutine `IXMdataset_2d::IXFset_dataset_2d` (type(`IXTdataset_2d`),intent(inout) *dataset\_2d*, type(`IXTstatus`),intent(inout) *status*, character(len=\*) ,intent(in),optional *title*, real(`dp`),dimension(:,:),intent(in),optional *signal*, real(`dp`),dimension(:,:),intent(in),optional *error*, type(`IXTunits`),intent(in),optional *s\_units*, real(`dp`),dimension(:),intent(in),optional *x*, type(`IXTunits`),intent(in),optional *x\_units*, logical,intent(in),optional *x\_distribution*, real(`dp`),dimension(:),intent(in),optional *y*, type(`IXTunits`),intent(in),optional *y\_units*, logical,intent(in),optional *y\_distribution*, type(`IXTdataset_2d`),intent(in),optional *ref*)

Definition at line 535 of file `IXMdataset_2d.f90`.

References `IXFcheck_dataset_2d()`.

Referenced by `IXFcontract_arrayd2d_dataset_2d()`, `IXFcreate_dataset_2d()`, `IXFeffic_dataset_2d()`, `IXMisis_raw_file::IXFget_spectrum_d2()`, `IXMdata::IXFrebin_data()`, `IXMdata::remap_data()`, and `IXMdata::sum_data()`.

Here is the call graph for this function:

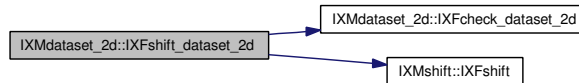


**5.11.1.37** subroutine `IXMdataset_2d::IXFshift_dataset_2d` (`type(IXTdataset_2d)`,`intent(out) wres`, `type(IXTdataset_2d)`,`intent(in) w1`, `type(IXTstatus)`,`intent(inout) status`, `real(dp)`,`intent(in)`, optional `shift_x`, `real(dp)`,`intent(in)`, optional `shift_y`)

Definition at line 824 of file `IXMdataset_2d.f90`.

References `IXFcheck_dataset_2d()`, and `IXMshift::IXFshift()`.

Here is the call graph for this function:

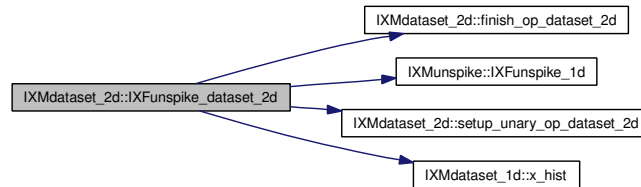


**5.11.1.38** subroutine `IXMdataset_2d::IXFunspike_dataset_2d` (`type(IXTdataset_2d)`,`intent(out) d2dout`, `type(IXTdataset_2d)`,`intent(in) d2d`, `type(IXTstatus)`,`intent(inout) status`)

Definition at line 2320 of file `IXMdataset_2d.f90`.

References `finish_op_dataset_2d()`, `IXMunspike::IXFunspike_1d()`, `setup_unary_op_dataset_2d()`, and `IXMdataset_1d::x_hist()`.

Here is the call graph for this function:

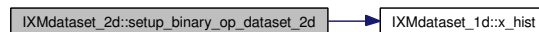


**5.11.1.39** subroutine `IXMdataset_2d::setup_binary_op_dataset_2d` (`type(IXTdataset_2d)`,`intent(out) wres`, `type(IXTdataset_2d)`,`intent(in) w1`, `type(IXTdataset_2d)`,`intent(in) w2`, `type(IXTstatus)`,`intent(inout) status`)

Definition at line 869 of file `IXMdataset_2d.f90`.

References `IXMdataset_1d::x_hist()`.

Here is the call graph for this function:



**5.11.1.40 subroutine IXMdataset\_2d::setup\_unary\_op\_dataset\_2d**  
 (type(IXTdataset\_2d),intent(out) *wres*, type(IXTdataset\_2d),intent(in) *w1*, type(IXTstatus),intent(inout) *status*)

Definition at line 967 of file IXMdataset\_2d.f90.

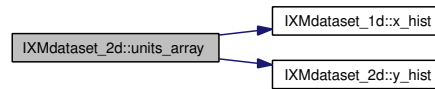
Referenced by IXFderiv1x\_dataset\_2d(), IXFderiv1y\_dataset\_2d(), IXFderiv2x\_dataset\_2d(), IXFderiv2y\_dataset\_2d(), and IXFunspike\_dataset\_2d().

**5.11.1.41 subroutine IXMdataset\_2d::units\_array** (type(IXTdataset\_2d),dimension(:),intent(inout),allocatable *arrayd2d*, type(IXTstatus),intent(inout) *status*, integer(i4b),intent(in) *emode*, real(dp),intent(in) *efixed*, real(dp),intent(in) *L1*, real(dp),dimension(:),intent(in) *L2*, real(dp),dimension(:),intent(in) *theta*, real(dp),dimension(:),intent(in) *delay*, type(IXTunits),intent(in) *units\_out*)

Definition at line 2088 of file IXMdataset\_2d.f90.

References IXMdataset\_1d::x\_hist(), and y\_hist().

Here is the call graph for this function:

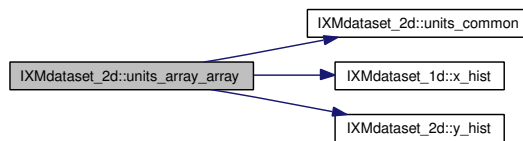


**5.11.1.42 subroutine IXMdataset\_2d::units\_array\_array**  
 (type(IXTdataset\_2d),dimension(:),intent(in),allocatable *d2d\_in*, type(IXTdataset\_2d),dimension(:) ,allocatable *d2d\_out*, type(IXTstatus),intent(inout) *status*, integer(i4b),intent(in) *emode*, real(dp),intent(in) *efixed*, real(dp),intent(in) *L1*, real(dp),dimension(:),intent(in) *L2*, real(dp),dimension(:),intent(in) *theta*, real(dp),dimension(:),intent(in) *delay*, type(IXTunits),intent(in) *units\_out*)

Definition at line 1999 of file IXMdataset\_2d.f90.

References units\_common(), IXMdataset\_1d::x\_hist(), and y\_hist().

Here is the call graph for this function:



**5.11.1.43** subroutine `IXMdataset_2d::units_common` (`type(IXTdataset_2d)`,`intent(in) d2d_in`, `integer(i4b)`,`intent(in) i`, `type(IXTdataset_2d)`,`intent(out) d2d_out`, `integer(i4b)`,`intent(in) emode`, `real(dp)`,`intent(in) efixed`, `real(dp)`,`intent(in) L1`, `real(dp)`,`intent(in) L2`, `real(dp)`,`intent(in) theta`, `real(dp)`,`intent(in) delay`, `type(IXTunits)`,`intent(in) units_out`, `type(IXTstatus)`,`intent(inout) status`)

Definition at line 2043 of file `IXMdataset_2d.f90`.

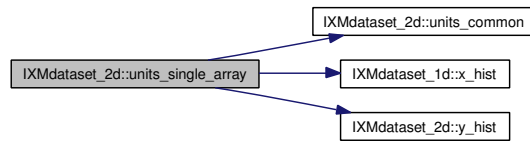
Referenced by `units_array_array()`, and `units_single_array()`.

**5.11.1.44** subroutine `IXMdataset_2d::units_single_array` (`type(IXTdataset_2d)`,`intent(inout) d2d`, `type(IXTdataset_2d)`,`dimension(:)`,`allocatable arrayd2d`, `type(IXTstatus)`,`intent(inout) status`, `integer(i4b)`,`intent(in) emode`, `real(dp)`,`intent(in) efixed`, `real(dp)`,`intent(in) L1`, `real(dp)`,`dimension(:)`,`intent(in) L2`, `real(dp)`,`dimension(:)`,`intent(in) theta`, `real(dp)`,`dimension(:)`,`intent(in) delay`, `type(IXTunits)`,`intent(in) units_out`)

Definition at line 1950 of file `IXMdataset_2d.f90`.

References `units_common()`, `IXMdataset_1d::x_hist()`, and `y_hist()`.

Here is the call graph for this function:



**5.11.1.45** logical `IXMdataset_2d::x_hist` (`type(IXTdataset_2d)`,`intent(in) w1d`)

Definition at line 2464 of file `IXMdataset_2d.f90`.

**5.11.1.46** logical `IXMdataset_2d::y_hist` (`type(IXTdataset_2d)`,`intent(in) w1d`)

Definition at line 2476 of file `IXMdataset_2d.f90`.

Referenced by `integrate_x_arr_dataset_2d()`, `integrate_x_dataset_2d()`, `IXFderiv1y_dataset_2d()`, `IXFderiv2y_dataset_2d()`, `IXFintegrate_xy_dataset_2d()`, `IXFintegrate_y_dataset_2d()`, `IXFrebin_xy_dataset_2d()`, `IXFrebin_y_dataset_2d()`, `IXFrebunch_xy_dataset_2d()`, `IXFrebunch_y_dataset_2d()`, `IXFregroup_xy_dataset_2d()`, `IXFregroup_y_dataset_2d()`, `units_array()`, `units_array_array()`, and `units_single_array()`.

## 5.12 IXMdataset\_3d Namespace Reference

### Classes

- struct IXTdataset\_3d

### Functions

- subroutine IXFoperation\_run\_dataset\_3d (op, field, arg, status)
- subroutine IXFcheck\_dataset\_3d (w1, status)
- subroutine IXFdestroy\_dataset\_3d (w3d, status)
- subroutine IXFcreate\_dataset\_3d (dataset\_3d, title, signal, error, s\_units, x\_units, x\_distribution, y, y\_units, y\_distribution, z, z\_units, z\_distribution, status)
- subroutine IXFset\_dataset\_3d (dataset\_3d, status, title, signal, error, s\_units, x, x\_units, x\_distribution, y, y\_units, y\_distribution, z, z\_units, z\_distribution, ref)
- subroutine IXFget\_dataset\_3d (w1, status)

### 5.12.1 Function Documentation

- 5.12.1.1** subroutine IXMdataset\_3d::IXFcheck\_dataset\_3d  
(type(IXTdataset\_3d),intent(in) w1, type(IXTstatus),intent(inout) status)

Definition at line 80 of file IXMdataset\_3d.f90.

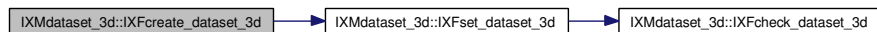
Referenced by IXFset\_dataset\_3d().

- 5.12.1.2** subroutine IXMdataset\_3d::IXFcreate\_dataset\_3d (type(IXTdataset\_3d),intent(out) dataset\_3d, character(len=\*) ,intent(in) title, real(dp),dimension(:, :, :),intent(in) signal, real(dp),dimension(:, :, :),intent(in) error, type(IXTunits),intent(in) s\_units, real(dp),dimension(:),intent(in) x, type(IXTunits),intent(in) x\_units, logical,intent(in) x\_distribution, real(dp),dimension(:),intent(in) y, type(IXTunits),intent(in) y\_units, logical,intent(in) y\_distribution, real(dp),dimension(:) ,intent(in) z, type(IXTunits),intent(in) z\_units, logical,intent(in) z\_distribution, type(IXTstatus),intent(inout) status)

Definition at line 109 of file IXMdataset\_3d.f90.

References IXFset\_dataset\_3d().

Here is the call graph for this function:



- 5.12.1.3** subroutine IXMdataset\_3d::IXFdestroy\_dataset\_3d  
(type(IXTdataset\_3d) w3d, type(IXTstatus) status)

Definition at line 87 of file IXMdataset\_3d.f90.

**5.12.1.4** subroutine IXMdataset\_3d::IXFget\_dataset\_3d  
 (type(IXTdataset\_3d),intent(in) *w1*, type(IXTstatus),intent(inout) *status*)

Definition at line 220 of file IXMdataset\_3d.f90.

**5.12.1.5** subroutine IXMdataset\_3d::IXFoperation\_run\_dataset\_3d  
 (type(IXToperation) *op*, character(len=\*) *field*, type(IXTdataset\_3d) *arg*,  
 type(IXTstatus) *status*)

Definition at line 50 of file IXMdataset\_3d.f90.

**5.12.1.6** subroutine IXMdataset\_3d::IXFset\_dataset\_3d (type(IXTdataset\_3d),intent(inout) *dataset\_3d*, type(IXTstatus),intent(inout) *status*, character(len=\*),intent(in),optional *title*, real(dp),dimension(:,:,:),intent(in),optional *signal*, real(dp),dimension(:,:,:),intent(in),optional *error*, type(IXTunits),intent(in),optional *s\_units*, real(dp),dimension(:),intent(in),optional *x*, type(IXTunits),intent(in),optional *x\_units*, logical,intent(in),optional *x\_distribution*, real(dp),dimension(:),intent(in),optional *y*, type(IXTunits),intent(in),optional *y\_units*, logical,intent(in),optional *y\_distribution*, real(dp),dimension(:),intent(in),optional *z*, type(IXTunits),intent(in),optional *z\_units*, logical,intent(in),optional *z\_distribution*, type(IXTdataset\_3d),intent(in),optional *ref*)

Definition at line 152 of file IXMdataset\_3d.f90.

References IXFcheck\_dataset\_3d().

Referenced by IXFcreate\_dataset\_3d().

Here is the call graph for this function:



## 5.13 IXMdataset\_4d Namespace Reference

### Classes

- struct `IXTdataset_4d`

### Functions

- subroutine `IXFoperation_run_dataset_4d` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcheck_dataset_4d` (`w1`, `status`)
- subroutine `IXFdestroy_dataset_4d` (`w3d`, `status`)
- subroutine `IXFcreate_dataset_4d` (`dataset_4d`, `title`, `signal`, `error`, `s_units`, `x1`, `x1_units`, `x1_distribution`, `x2`, `x2_units`, `x2_distribution`, `x3`, `x3_units`, `x3_distribution`, `x4`, `x4_units`, `x4_distribution`, `status`)
- subroutine `IXFset_dataset_4d` (`dataset_4d`, `status`, `title`, `signal`, `error`, `s_units`, `x1`, `x1_units`, `x1_distribution`, `x2`, `x2_units`, `x2_distribution`, `x3`, `x3_units`, `x3_distribution`, `x4`, `x4_units`, `x4_distribution`, `ref`)
- subroutine `IXFget_dataset_4d` (`w1`, `status`)

### 5.13.1 Function Documentation

- 5.13.1.1** subroutine `IXMdataset_4d::IXFcheck_dataset_4d`  
(`type(IXTdataset_4d)`,`intent(in) w1`, `type(IXTstatus)`,`intent(inout) status`)

Definition at line 96 of file `IXMdataset_4d.f90`.

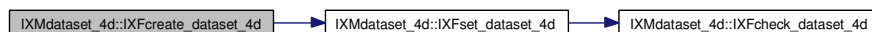
Referenced by `IXFset_dataset_4d()`.

- 5.13.1.2** subroutine `IXMdataset_4d::IXFcreate_dataset_4d` (`type(IXTdataset_4d)`,`intent(out) dataset_4d`, `character(len=*)`,`intent(in) title`, `real(dp)`,`dimension(:, :, :)`,`intent(in) signal`, `real(dp)`,`dimension(:, :, :)`,`intent(in) error`, `type(IXTunits)`,`intent(in) s_units`, `real(dp)`,`dimension(:)`,`intent(in) x1`, `type(IXTunits)`,`intent(in) x1_units`, `logical`,`intent(in) x1_distribution`, `real(dp)`,`dimension(:)`,`intent(in) x2`, `type(IXTunits)`,`intent(in) x2_units`, `logical`,`intent(in) x2_distribution`, `real(dp)`,`dimension(:)`,`intent(in) x3`, `type(IXTunits)`,`intent(in) x3_units`, `logical`,`intent(in) x3_distribution`, `real(dp)`,`dimension(:)`,`intent(in) x4`, `type(IXTunits)`,`intent(in) x4_units`, `logical`,`intent(in) x4_distribution`, `type(IXTstatus)`,`intent(inout) status`)

Definition at line 128 of file `IXMdataset_4d.f90`.

References `IXFset_dataset_4d()`.

Here is the call graph for this function:



**5.13.1.3 subroutine IXMdataset\_4d::IXFdestroy\_dataset\_4d**  
 (type(IXTdataset\_4d) *w3d*, type(IXTstatus) *status*)

Definition at line 103 of file IXMdataset\_4d.f90.

**5.13.1.4 subroutine IXMdataset\_4d::IXFget\_dataset\_4d**  
 (type(IXTdataset\_4d),intent(in) *w1*, type(IXTstatus),intent(inout) *status*)

Definition at line 247 of file IXMdataset\_4d.f90.

**5.13.1.5 subroutine IXMdataset\_4d::IXFoperation\_run\_dataset\_4d**  
 (type(IXToperation) *op*, character(len=\*) *field*, type(IXTdataset\_4d) *arg*,  
 type(IXTstatus) *status*)

Definition at line 63 of file IXMdataset\_4d.f90.

**5.13.1.6 subroutine IXMdataset\_4d::IXFset\_dataset\_4d**  
 (type(IXTdataset\_4d),intent(inout) *dataset\_4d*,  
 type(IXTstatus),intent(inout) *status*, character(len=\*),intent(in),optional  
*title*, real(dp),dimension(:,:,:),intent(in),optional  
*signal*, real(dp),dimension(:,:,:) ,intent(in),optional  
*error*, type(IXTunits),intent(in),optional *s\_* -  
*units*, real(dp),dimension(:),intent(in),optional *x1*,  
 type(IXTunits),intent(in),optional *x1\_units*, logical,intent(in),optional  
*x1\_distribution*, real(dp),dimension(:),intent(in),optional *x2*,  
 type(IXTunits),intent(in),optional *x2\_units*, logical,intent(in),optional  
*x2\_distribution*, real(dp),dimension(:),intent(in),optional *x3*,  
 type(IXTunits),intent(in),optional *x3\_units*, logical,intent(in),optional  
*x3\_distribution*, real(dp),dimension(:),intent(in),optional *x4*,  
 type(IXTunits),intent(in),optional *x4\_units*, logical,intent(in),optional  
*x4\_distribution*, type(IXTdataset\_4d),intent(in),optional *ref*)

Definition at line 176 of file IXMdataset\_4d.f90.

References IXFcheck\_dataset\_4d().

Referenced by IXFcreate\_dataset\_4d().

Here is the call graph for this function:





## 5.14 IXMdataset\_common Namespace Reference

## 5.15 IXMdataset\_nd Namespace Reference

### Classes

- struct IXTdataset\_nd

## 5.16 IXMdatum Namespace Reference

### Classes

- struct `IXTdatum`
- interface `IXFplus_Datum`
- interface `IXFplus`
- interface `IXFminus_Datum`
- interface `IXFminus`
- interface `IXFtimes_Datum`
- interface `IXFtimes`
- interface `IXFdivide_Datum`
- interface `IXFdivide`
- interface `IXFpower_Datum`
- interface `IXFpower`
- interface `IXFexp`
- interface `IXFlog`
- interface `IXFsin`
- interface `IXFcos`
- interface `IXFtan`
- interface `IXFsinh`
- interface `IXFcosh`
- interface `IXFtanh`

### Functions

- subroutine `IXFdestroy_datum` (*arg*, *status*)
- subroutine `IXFoperation_run_datum` (*op*, *field*, *arg*, *status*)
- subroutine `IXFget_datum` (*datum*, *status*, *value*, *error*, *wout*)
- subroutine `IXFcreate_datum` (*datum*, *value*, *error*, *status*)
- subroutine `IXFset_datum` (*datum*, *status*, *value*, *error*, *ref*)
- subroutine `IXFcheck_datum` (*w1*, *status*)
- subroutine `IXFexp_Datum` (*wres*, *w1*, *status*)
- subroutine `IXFlog_Datum` (*wres*, *w1*, *status*)
- subroutine `IXFsin_Datum` (*wres*, *w1*, *status*)
- subroutine `IXFcos_Datum` (*wres*, *w1*, *status*)
- subroutine `IXFtan_Datum` (*wres*, *w1*, *status*)
- subroutine `IXFsinh_Datum` (*wres*, *w1*, *status*)
- subroutine `IXFcosh_Datum` (*wres*, *w1*, *status*)
- subroutine `IXFtanh_Datum` (*wres*, *w1*, *status*)

### 5.16.1 Function Documentation

- 5.16.1.1 subroutine `IXMdatum::IXFcheck_datum` (`type(IXTdatum)` *w1*,  
`type(IXTStatus)` *status*)

Definition at line 171 of file `IXMdatum.f90`.

**5.16.1.2** subroutine IXMdatum::IXFcos\_Datum (type(IXTdatum) *wres*,  
type(IXTdatum) *w1*, type(IXTstatus) *status*)

Definition at line 405 of file IXMdatum.f90.

**5.16.1.3** subroutine IXMdatum::IXFcosh\_Datum (type(IXTdatum) *wres*,  
type(IXTdatum) *w1*, type(IXTstatus) *status*)

Definition at line 435 of file IXMdatum.f90.

**5.16.1.4** subroutine IXMdatum::IXFcreate\_datum (type(IXTdatum),intent(out)  
*datum*, real(dp),intent(in) *value*, real(dp),intent(in) *error*,  
type(IXTstatus),intent(inout) *status*)

Definition at line 147 of file IXMdatum.f90.

References IXFset\_datum().

Here is the call graph for this function:



**5.16.1.5** subroutine IXMdatum::IXFdestroy\_datum (type(IXTdatum) *arg*,  
type(IXTstatus) *status*)

Definition at line 109 of file IXMdatum.f90.

**5.16.1.6** subroutine IXMdatum::IXFexp\_Datum (type(IXTdatum) *wres*,  
type(IXTdatum) *w1*, type(IXTstatus) *status*)

Definition at line 374 of file IXMdatum.f90.

**5.16.1.7** subroutine IXMdatum::IXFget\_datum (type(IXTdatum),intent(in) *datum*,  
type(IXTstatus),intent(inout) *status*, real(dp),intent(out),optional *value*,  
real(dp),intent(out),optional *error*, type(IXTdatum),intent(out),optional  
*wout*)

Definition at line 131 of file IXMdatum.f90.

References IXFset\_datum().

Here is the call graph for this function:



**5.16.1.8** subroutine IXMdatum::IXFlog\_Datum (type(IXTdatum) *wres*,  
type(IXTdatum) *w1*, type(IXTstatus) *status*)

Definition at line 385 of file IXMdatum.f90.

**5.16.1.9** subroutine IXMdatum::IXFoperation\_run\_datum (type(IXToperation)  
*op*, character(len=\*) *field*, type(IXTdatum) *arg*, type(IXTstatus) *status*)

Definition at line 115 of file IXMdatum.f90.

**5.16.1.10** subroutine IXMdatum::IXFset\_datum (type(IXTdatum),intent(inout)  
*datum*, type(IXTstatus),intent(inout) *status*,  
real(dp),intent(in),optional *value*, real(dp),intent(in),optional *error*,  
type(IXTdatum),intent(in),optional *ref*)

Definition at line 157 of file IXMdatum.f90.

Referenced by IXFcreate\_datum(), and IXFget\_datum().

**5.16.1.11** subroutine IXMdatum::IXFsin\_Datum (type(IXTdatum) *wres*,  
type(IXTdatum) *w1*, type(IXTstatus) *status*)

Definition at line 395 of file IXMdatum.f90.

**5.16.1.12** subroutine IXMdatum::IXFsinh\_Datum (type(IXTdatum) *wres*,  
type(IXTdatum) *w1*, type(IXTstatus) *status*)

Definition at line 425 of file IXMdatum.f90.

**5.16.1.13** subroutine IXMdatum::IXFtan\_Datum (type(IXTdatum) *wres*,  
type(IXTdatum) *w1*, type(IXTstatus) *status*)

Definition at line 415 of file IXMdatum.f90.

**5.16.1.14** subroutine IXMdatum::IXFtanh\_Datum (type(IXTdatum) *wres*,  
type(IXTdatum) *w1*, type(IXTstatus) *status*)

Definition at line 445 of file IXMdatum.f90.

## 5.17 IXMdatum\_array Namespace Reference

### Classes

- struct IXTdatum\_array
- interface IXFplus\_Datum\_array
- interface IXFplus
- interface IXFminus\_datum\_array
- interface IXFminus
- interface IXFtimes\_Datum\_array
- interface IXFtimes
- interface IXFdivide\_Datum\_array
- interface IXFdivide
- interface IXFpower\_Datum\_array
- interface IXFpower
- interface IXFexp
- interface IXFlog
- interface IXFsin
- interface IXFcos
- interface IXFtan
- interface IXFsinh
- interface IXFcosh
- interface IXFtanh

### Functions

- subroutine IXFdestroy\_datum\_array (arg, status)
- subroutine IXFoperation\_run\_datum\_array (op, field, arg, status)
- subroutine IXFcheck\_datum\_array (w1, status)
- subroutine IXFcreate\_datum\_array (array, signal, error, status)
- subroutine IXFset\_datum\_array (array, status, signal, error, ref)
- subroutine IXFget\_datum\_array (array, status, signal, error, wout)
- subroutine IXFget\_ptr\_datum\_array (w1, s\_ptr, e\_ptr)
- subroutine IXFget\_alloc\_datum\_array (w1, status, signal, error, wout)
- integer(i4b) IXFSize\_Datum\_array (w1)

#### 5.17.1 Function Documentation

##### 5.17.1.1 subroutine IXMdatum\_array::IXFcheck\_datum\_array (type(IXTdatum\_array) w1, type(IXTStatus) status)

Definition at line 137 of file IXMdatum\_array.f90.

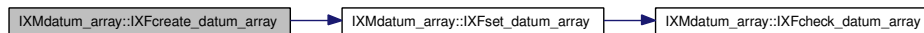
Referenced by IXFget\_alloc\_datum\_array(), and IXFset\_datum\_array().

**5.17.1.2** subroutine IXMdatum\_array::IXFcreate\_datum\_array (type(IXTdatum\_array),intent(out) array, real(dp),dimension(:),intent(in) signal, real(dp),dimension(:) ,intent(in) error, type(IXTstatus) status)

Definition at line 154 of file IXMdatum\_array.f90.

References IXFset\_datum\_array().

Here is the call graph for this function:



**5.17.1.3** subroutine IXMdatum\_array::IXFdestroy\_datum\_array (type(IXTdatum\_array) arg, type(IXTstatus) status)

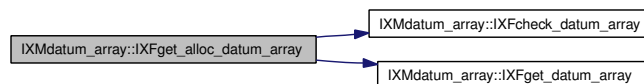
Definition at line 109 of file IXMdatum\_array.f90.

**5.17.1.4** subroutine IXMdatum\_array::IXFget\_alloc\_datum\_array (type(IXTdatum\_array),intent(in) w1, type(IXTstatus),intent(inout) status, real(dp),dimension(:) ,optional,allocatable signal, real(dp),dimension(:) ,optional,allocatable error, type(IXTdatum\_array),intent(out),optional wout)

Definition at line 229 of file IXMdatum\_array.f90.

References IXFcheck\_datum\_array(), and IXFget\_datum\_array().

Here is the call graph for this function:



**5.17.1.5** subroutine IXMdatum\_array::IXFget\_datum\_array (type(IXTdatum\_array),intent(in) array, type(IXTstatus),intent(inout) status, real(dp),dimension(:),intent(out),optional signal, real(dp),dimension(:) ,intent(out),optional error, type(IXTdatum\_array),intent(out),optional wout)

Definition at line 202 of file IXMdatum\_array.f90.

Referenced by IXFget\_alloc\_datum\_array().

**5.17.1.6** subroutine IXMdatum\_array::IXFget\_ptr\_datum\_array (type(IXTdatum\_array),intent(in) w1, real(dp),dimension(:) ,optional,pointer s\_ptr, real(dp),dimension(:) ,optional,pointer e\_ptr)

Definition at line 218 of file IXMdatum\_array.f90.

**5.17.1.7** subroutine `IXMdatum_array::IXFoperation_run_datum_array`  
 (type(`IXToperation`) *op*, character(len=\*) *field*, type(`IXTdatum_array`)  
*arg*, type(`IXTstatus`) *status*)

Definition at line 120 of file `IXMdatum_array.f90`.

**5.17.1.8** subroutine `IXMdatum_array::IXFset_datum_array` (type(`IXTdatum_`  
`array`),intent(inout) *array*, type(`IXTstatus`),intent(inout) *status*,  
 real(dp),dimension(:),intent(in),optional *signal*, real(dp),dimension(:)  
 ,intent(in),optional *error*, type(`IXTdatum_array`),intent(in),optional *ref*)

Definition at line 168 of file `IXMdatum_array.f90`.

References `IXFcheck_datum_array()`.

Referenced by `IXFcreate_datum_array()`, `IXMmoments::IXFget_moments()`, and  
`IXMmoments::IXFset_moments()`.

Here is the call graph for this function:



**5.17.1.9** integer(i4b) `IXMdatum_array::IXFSize_Datum_array`  
 (type(`IXTdatum_array`),intent(in) *w1*)

Definition at line 353 of file `IXMdatum_array.f90`.



## 5.18 IXMderivative Namespace Reference

### Functions

- subroutine `IXFderiv_1_1d` (`x`, `y`, `e`, `y1`, `e1`, `status`)
- subroutine `IXFderiv_2_1d` (`x`, `y`, `e`, `y2`, `e2`, `status`)

### 5.18.1 Function Documentation

**5.18.1.1** subroutine `IXMderivative::IXFderiv_1_1d`  
(`real(dp),dimension(:),intent(in) x`, `real(dp),dimension(:),intent(in) y`,  
`real(dp),dimension(:),intent(in) e`, `real(dp),dimension(:),intent(out) y1`,  
`real(dp),dimension(:),intent(out) e1`, `type(IXTstatus) status`)

Definition at line 6 of file `IXMderivative.f90`.

References `IXMstatus::IXCseverity_error`, and `NXUmodule::status`.

Referenced by `IXMdataset_1d::IXFderiv1_dataset_1d()`, `IXMdataset_2d::IXFderiv1x_dataset_2d()`, and `IXMdataset_2d::IXFderiv1y_dataset_2d()`.

**5.18.1.2** subroutine `IXMderivative::IXFderiv_2_1d`  
(`real(dp),dimension(:),intent(in) x`, `real(dp),dimension(:),intent(in) y`,  
`real(dp),dimension(:),intent(in) e`, `real(dp),dimension(:),intent(out) y2`,  
`real(dp),dimension(:),intent(out) e2`, `type(IXTstatus) status`)

Definition at line 96 of file `IXMderivative.f90`.

References `IXMstatus::IXCseverity_error`, and `NXUmodule::status`.

Referenced by `IXMdataset_1d::IXFderiv2_dataset_1d()`, `IXMdataset_2d::IXFderiv2x_dataset_2d()`, and `IXMdataset_2d::IXFderiv2y_dataset_2d()`.

## 5.19 IXMdet\_he3 Namespace Reference

### Classes

- struct `IXTdet_he3`

### Functions

- subroutine `IXFoperation_run_det_he3` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcheck_det_he3` (`arg`, `status`)
- subroutine `IXFdestroy_det_he3` (`det`, `status`)
- subroutine `IXFcreate_det_he3` (`arg`, `checksum`, `gas_pressure`, `wall_thickness`, `status`)
- subroutine `IXFset_det_he3` (`det_he3`, `status`, `checksum`, `gas_pressure`, `wall_thickness`, `ref`)
- subroutine `IXFget_det_he3` (`det_he3`, `status`, `checksum`, `gas_pressure`, `wall_thickness`, `wout`)

### 5.19.1 Function Documentation

#### 5.19.1.1 subroutine `IXMdet_he3::IXFcheck_det_he3` (`type(IXTdet_he3) arg`, `type(IXTstatus) status`)

Definition at line 51 of file `IXMdet_he3.f90`.

References `IXMbase::IXFcheck_base()`.

Here is the call graph for this function:



#### 5.19.1.2 subroutine `IXMdet_he3::IXFcreate_det_he3` (`type(IXTdet_he3) arg`, `integer(i4b),dimension(:),intent(in) checksum`, `real(dp),dimension(:),intent(in) gas_pressure`, `real(dp),dimension(:),intent(in) wall_thickness`, `type(IXTstatus) status`)

Definition at line 84 of file `IXMdet_he3.f90`.

References `IXFset_det_he3()`.

Referenced by `IXMdetector::IXFpopulate_detector()`.

Here is the call graph for this function:



#### 5.19.1.3 subroutine `IXMdet_he3::IXFdestroy_det_he3` (`type(IXTdet_he3) det`, `type(IXTstatus) status`)

Definition at line 66 of file `IXMdet_he3.f90`.

**5.19.1.4** subroutine IXMdet\_he3::IXFget\_det\_he3 (type(IXTdet\_he3),intent(inout) *det\_he3*, type(IXTstatus) *status*, integer(i4b),dimension(:) ,intent(out),optional *checksum*, real(dp),dimension(:) ,intent(out),optional *gas\_pressure*, real(dp),dimension(:) ,intent(out),optional *wall\_thickness*, type(IXTdet\_he3),intent(out),optional *wout*)

Definition at line 147 of file IXMdet\_he3.f90.

**5.19.1.5** subroutine IXMdet\_he3::IXFoperation\_run\_det\_he3 (type(IXToperation) *op*, character(len=\*) *field*, type(IXTdet\_he3) *arg*, type(IXTstatus) *status*)

Definition at line 31 of file IXMdet\_he3.f90.

**5.19.1.6** subroutine IXMdet\_he3::IXFset\_det\_he3 (type(IXTdet\_he3),intent(inout) *det\_he3*, type(IXTstatus) *status*, integer(i4b),dimension(:) ,intent(in),optional *checksum*, real(dp),dimension(:) ,intent(in),optional *gas\_pressure*, real(dp),dimension(:) ,intent(in),optional *wall\_thickness*, type(IXTdet\_he3),intent(in),optional *ref*)

Definition at line 106 of file IXMdet\_he3.f90.

Referenced by IXFcreate\_det\_he3().

## 5.20 IXMdet\_\_solid Namespace Reference

### Classes

- struct `IXTdet__solid`

### Functions

- subroutine `IXFoperation__run__det__solid` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcheck__det__solid` (`arg`, `status`)
- subroutine `IXFdestroy__det__solid` (`det`, `status`)
- subroutine `IXFcreate__det__solid` (`arg`, `checksum`, `macro_xs`, `status`)
- subroutine `IXFset__det__solid` (`det__solid`, `status`, `checksum`, `macro_xs`, `ref`)
- subroutine `IXFget__det__solid` (`det__solid`, `status`, `checksum`, `macro_xs`, `wout`)

### 5.20.1 Function Documentation

#### 5.20.1.1 subroutine `IXMdet__solid::IXFcheck__det__solid` (`type(IXTdet__solid) arg`, `type(IXTstatus) status`)

Definition at line 48 of file `IXMdet__solid.f90`.

References `IXMbase::IXFcheck__base()`.

Here is the call graph for this function:



#### 5.20.1.2 subroutine `IXMdet__solid::IXFcreate__det__solid` (`type(IXTdet__solid) arg`, `integer(i4b),dimension(:),intent(in) checksum`, `real(dp),dimension(:),intent(in) macro_xs`, `type(IXTstatus) status`)

Definition at line 80 of file `IXMdet__solid.f90`.

References `IXFset__det__solid()`.

Here is the call graph for this function:



#### 5.20.1.3 subroutine `IXMdet__solid::IXFdestroy__det__solid` (`type(IXTdet__solid) det`, `type(IXTstatus) status`)

Definition at line 63 of file `IXMdet__solid.f90`.

**5.20.1.4** subroutine IXMdet\_solid::IXFget\_det\_solid (type(IXTdet\_solid),intent(inout) *det\_solid*, type(IXTstatus) *status*, integer(i4b),dimension(:) ,intent(out),optional *checksum*, real(dp),dimension(:) ,intent(out),optional *macro\_xs*, type(IXTdet\_solid),intent(out),optional *wout*)

Definition at line 142 of file IXMdet\_solid.f90.

**5.20.1.5** subroutine IXMdet\_solid::IXFoperation\_run\_det\_solid (type(IXToperation) *op*, character(len=\*) *field*, type(IXTdet\_solid) *arg*, type(IXTstatus) *status*)

Definition at line 29 of file IXMdet\_solid.f90.

**5.20.1.6** subroutine IXMdet\_solid::IXFset\_det\_solid (type(IXTdet\_solid),intent(inout) *det\_solid*, type(IXTstatus) *status*, integer(i4b),dimension(:) ,intent(in),optional *checksum*, real(dp),dimension(:) ,intent(in),optional *macro\_xs*, type(IXTdet\_solid),intent(in),optional *ref*)

Definition at line 104 of file IXMdet\_solid.f90.

Referenced by IXFcreate\_det\_solid().

## 5.21 IXMdetector Namespace Reference

### Classes

- struct `IXTdetector`

### Functions

- subroutine `IXFoperation_run_detector` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcheck_detector` (`arg`, `status`)
- subroutine `IXFdestroy_detector` (`detector`, `status`)
- subroutine `IXFincfref_detector` (`detector`)
- subroutine `IXFdecfref_detector` (`detector`)
- subroutine `IXFset_detector` (`detector`, `status`, `checksum`, `det_no`, `delay_time`, `dead_time`, `theta`, `L2`, `phi`, `group_index`, `det_type`, `det_he3`, `det_solid`, `type_index`, `ref`)
- subroutine `IXFcreate_detector` (`detector`, `checksum`, `det_no`, `delay_time`, `dead_time`, `theta`, `L2`, `phi`, `group_index`, `det_type`, `det_he3`, `det_solid`, `type_index`, `status`)
- subroutine `IXFget_detector` (`detector`, `status`, `checksum`, `det_no`, `delay_time`, `dead_time`, `theta`, `L2`, `phi`, `group_index`, `det_type`, `det_he3`, `det_solid`, `type_index`, `wout`)
- subroutine `IXFget_alloc_detector` (`detector`, `status`, `checksum`, `det_no`, `delay_time`, `dead_time`, `theta`, `L2`, `phi`, `group_index`, `det_type`, `det_he3`, `det_solid`, `type_index`, `wout`)
- subroutine `IXFget_ptr_detector` (`detector`, `checksum`, `det_no`, `delay_time`, `dead_time`, `theta`, `L2`, `phi`, `group_index`, `&det_type`, `type_index`)
- `real(dp)` `IXFavgL2_detector` (`arg`, `list_in`)
- `real(dp)` `IXFavgphi_detector` (`arg`, `list_in`)
- `real(dp)` `IXFavgtheta_detector` (`arg`, `list_in`)
- `real(dp)` `IXFavgdelaytime_detector` (`arg`, `list_in`)
- `real(dp)` `IXFavgdeadtime_detector` (`arg`, `list_in`)
- `real(dp)` `IXFaverage_detector` (`var_array`, `list_in`)
- subroutine `IXFupdate_detector` (`det`, `good`, `total`, `checksum`, `det_no`, `delay_time`, `dead_time`, `theta`, `L2`, `phi`, `group_index`, `det_type`, `det_he3`, `det_solid`, `type_index`, `status`)
- subroutine `IXFalloc_section_detector` (`arg`, `status`, `list`, `checksum`, `det_no`, `delay_time`, `dead_time`, `theta`, `L2`, `phi`, `group_index`, `det_type`, `type_index`)
- subroutine `IXFpopulate_detector` (`detector`, `rawfile`, `index_list`, `status`)

## 5.21.1 Function Documentation

**5.21.1.1** subroutine IXMdetector::IXFalloc\_section\_detector (type(IXTdetector) *arg*, type(IXTstatus) *status*, integer(i4b),dimension(:),intent(in) *list*, integer(i4b),dimension(:) ,optional,allocatable *checksum*, integer(i4b),dimension(:) ,optional,allocatable *det\_no*, real(dp),dimension(:) ,optional,allocatable *delay\_time*, real(dp),dimension(:) ,optional,allocatable *dead\_time*, real(dp),dimension(:),optional,allocatable *theta*, real(dp),dimension(:),optional,allocatable *L2*, real(dp),dimension(:),optional,allocatable *phi*, integer(i4b),dimension(:),optional,allocatable *group\_index*, integer(i4b),dimension(:) ,optional,allocatable *det\_type*, integer(i4b),dimension(:),optional,allocatable *type\_index*)

Definition at line 607 of file IXMdetector.f90.

Referenced by IXMdata::IXFunits\_data(), and IXMdata::IXFunits\_rebin\_data().

**5.21.1.2** real(dp) IXMdetector::IXFaverage\_detector (real(dp),dimension(:),intent(in) *var\_array*, integer(i4b),dimension(:),intent(in) *list\_in*)

Definition at line 536 of file IXMdetector.f90.

Referenced by IXFavgdeadtime\_detector(), IXFavgdelaytime\_detector(), IXFavgL2\_detector(), IXFavgphi\_detector(), and IXFavgtheta\_detector().

**5.21.1.3** real(dp) IXMdetector::IXFavgdeadtime\_detector (type(IXTdetector),intent(in) *arg*, integer(i4b),dimension(:),intent(in) *list\_in*)

Definition at line 522 of file IXMdetector.f90.

References IXFaverage\_detector().

Referenced by IXMeffdet\_index::IXFpopulate\_effdet\_index().

Here is the call graph for this function:



**5.21.1.4** real(dp) IXMdetector::IXFavgdelaytime\_detector (type(IXTdetector),intent(in) *arg*, integer(i4b),dimension(:),intent(in) *list\_in*)

Definition at line 512 of file IXMdetector.f90.

References IXFaverage\_detector().

Referenced by IXMeffdet\_index::IXFpopulate\_effdet\_index(), and IXMdata::popunitsrebin\_datasets().

Here is the call graph for this function:



**5.21.1.5** `real(dp) IXMdetector::IXFavgL2_detector (type(IXTdetector),intent(in) arg, integer(i4b),dimension(:),intent(in) list_in)`

Definition at line 482 of file IXMdetector.f90.

References IXFaverage\_detector().

Referenced by IXMeffdet\_index::IXFpopulate\_effdet\_index(), and IXMdata::popunitsrebin\_datasets().

Here is the call graph for this function:



**5.21.1.6** `real(dp) IXMdetector::IXFavgphi_detector (type(IXTdetector),intent(in) arg, integer(i4b),dimension(:),intent(in) list_in)`

Definition at line 492 of file IXMdetector.f90.

References IXFaverage\_detector().

Referenced by IXMeffdet\_index::IXFpopulate\_effdet\_index().

Here is the graph for this function:



**5.21.1.7** `real(dp) IXMdetector::IXFavgtheta_detector (type(IXTdetector),intent(in) arg, integer(i4b),dimension(:),intent(in) list_in)`

Definition at line 502 of file IXMdetector.f90.

References IXFaverage\_detector().

Referenced by IXMeffdet\_index::IXFpopulate\_effdet\_index(), and IXMdata::popunitsrebin\_datasets().

Here is the call graph for this function:



**5.21.1.8** `subroutine IXMdetector::IXFcheck_detector (type(IXTdetector) arg, type(IXTstatus) status)`

Definition at line 120 of file IXMdetector.f90.



References IXMbase::IXFcheck\_base().

Here is the call graph for this function:



**5.21.1.9** subroutine IXMdetector::IXFcreate\_detector (type(IXTdetector) *detector*, integer(i4b),dimension(:) ,intent(in) *checksum*, integer(i4b),dimension(:) ,intent(in) *det\_no*, real(dp),dimension(:) ,intent(in) *delay\_time*, real(dp),dimension(:) ,intent(in) *dead\_time*, real(dp),dimension(:),intent(in) *theta*, real(dp),dimension(:),intent(in) *L2*, real(dp),dimension(:),intent(in) *phi*, integer(i4b),dimension(:),intent(in) *group\_index*, integer(i4b),dimension(:) ,intent(in) *det\_type*, type(IXTdet\_he3),intent(in),optional *det\_he3*, type(IXTdet\_solid),intent(in),optional *det\_solid*, integer(i4b),dimension(:),intent(in) *type\_index*, type(IXTstatus) *status*)

Definition at line 284 of file IXMdetector.f90.

References IXFset\_detector().

Referenced by IXFpopulate\_detector(), and IXFupdate\_detector().

Here is the call graph for this function:



**5.21.1.10** subroutine IXMdetector::IXFdecref\_detector (type(IXTdetector) *detector*)

Definition at line 186 of file IXMdetector.f90.

**5.21.1.11** subroutine IXMdetector::IXFdestroy\_detector (type(IXTdetector) *detector*, type(IXTstatus) *status*)

Definition at line 139 of file IXMdetector.f90.

**5.21.1.12** subroutine `IXMdetector::IXFget_alloc_detector`  
 (type(`IXTdetector`),intent(in) *detector*, type(`IXTstatus`)  
*status*, integer(i4b),dimension(:) ,optional,allocatable  
*checksum*, integer(i4b),dimension(:) ,optional,allocatable  
*det\_no*, real(dp),dimension(:) ,optional,allocatable  
*delay\_time*, real(dp),dimension(:) ,optional,allocatable  
*dead\_time*, real(dp),dimension(:),optional,allocatable  
*theta*, real(dp),dimension(:),optional,allocatable  
*L2*, real(dp),dimension(:),optional,allocatable *phi*,  
 integer(i4b),dimension(:),optional,allocatable *group\_* -  
*index*, integer(i4b),dimension(:) ,optional,allocatable  
*det\_type*, type(`IXTdet_he3`),intent(out),optional *det\_he3*,  
 type(`IXTdet_solid`),intent(out),optional *det\_solid*,  
 integer(i4b),dimension(:),optional,allocatable *type\_index*,  
 type(`IXTdetector`),intent(out) *wout*)

Definition at line 393 of file `IXMdetector.f90`.

References `IXFget_detector()`.

Here is the call graph for this function:



**5.21.1.13** subroutine `IXMdetector::IXFget_detector` (type(`IXTdetector`),intent(in)  
*detector*, type(`IXTstatus`),intent(inout) *status*, integer(i4b),dimension(:)  
 ,intent(out),optional *checksum*, integer(i4b),dimension(:)  
 ,intent(out),optional *det\_no*, real(dp),dimension(:) ,intent(out),optional  
*delay\_time*, real(dp),dimension(:) ,intent(out),optional  
*dead\_time*, real(dp),dimension(:),intent(out),optional  
*theta*, real(dp),dimension(:),intent(out),optional  
*L2*, real(dp),dimension(:),intent(out),optional *phi*,  
 integer(i4b),dimension(:),intent(out),optional *group\_* -  
*index*, integer(i4b),dimension(:) ,intent(out),optional  
*det\_type*, type(`IXTdet_he3`),intent(out),optional *det\_he3*,  
 type(`IXTdet_solid`),intent(out),optional *det\_solid*,  
 integer(i4b),dimension(:),intent(out),optional *type\_index*,  
 type(`IXTdetector`),intent(out),optional *wout*)

Definition at line 341 of file `IXMdetector.f90`.

Referenced by `IXFget_alloc_detector()`, and `IXMeffdet_index::IXFpopulate_effdet_index()`.

**5.21.1.14** subroutine IXMdetector::IXFget\_ptr\_detector  
 (type(IXTdetector),intent(in) *detector*, integer(i4b),dimension(:),optional,pointer *checksum*, integer(i4b),dimension(:),optional,pointer *det\_no*, real(dp),dimension(:),optional,pointer *delay\_time*, real(dp),dimension(:),optional,pointer *dead\_time*, real(dp),dimension(:),optional,pointer *theta*, real(dp),dimension(:),optional,pointer *L2*, real(dp),dimension(:),optional,pointer *phi*, integer(i4b),dimension(:),optional,pointer *group\_index*, &,dimension(:),optional,pointer *det\_type*, integer(i4b),dimension(:),optional,pointer *type\_index*)

Definition at line 462 of file IXMdetector.f90.

Referenced by IXMdata::IXFgetei\_data(), and IXMdata::IXFpeakarea\_data().

**5.21.1.15** subroutine IXMdetector::IXFincref\_detector (type(IXTdetector) *detector*)

Definition at line 175 of file IXMdetector.f90.

**5.21.1.16** subroutine IXMdetector::IXFoperation\_run\_detector  
 (type(IXToperation) *op*, character(len=\*) *field*, type(IXTdetector) *arg*, type(IXTstatus) *status*)

Definition at line 89 of file IXMdetector.f90.

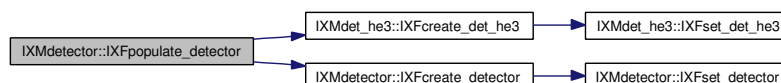
**5.21.1.17** subroutine IXMdetector::IXFpopulate\_detector (type(IXTdetector) *detector*, type(IXTisis\_raw\_file) *rawfile*, integer(i4b),dimension(:),intent(in),allocatable *index\_list*, type(IXTstatus) *status*)

Definition at line 730 of file IXMdetector.f90.

References IXMtype\_definitions::d0, IXMdet\_he3::IXFcreate\_det\_he3(), and IXFcreate\_detector().

Referenced by IXMinstrument::IXFpopulate\_instrument().

Here is the call graph for this function:



**5.21.1.18** subroutine `IXMdetector::IXFset_detector`  
 (type(`IXTdetector`),intent(inout) *detector*, type(`IXTstatus`) *status*,  
 integer(i4b),dimension(:) ,intent(in),optional *checksum*, inte-  
 ger(i4b),dimension(:) ,intent(in),optional *det\_no*, real(dp),dimension(:)  
 ,intent(in),optional *delay\_time*, real(dp),dimension(:)  
 ,intent(in),optional *dead\_time*, real(dp),dimension(:),intent(in),optional  
*theta*, real(dp),dimension(:),intent(in),optional *L2*,  
 real(dp),dimension(:),intent(in),optional *phi*, inte-  
 ger(i4b),dimension(:),intent(in),optional *group\_index*,  
 integer(i4b),dimension(:) ,intent(in),optional *det\_type*, type(`IXTdet_`  
`he3`),intent(in),optional *det\_he3*, type(`IXTdet_solid`),intent(in),optional  
*det\_solid*, integer(i4b),dimension(:),intent(in),optional *type\_index*,  
 type(`IXTdetector`),intent(in),optional *ref*)

Definition at line 202 of file `IXMdetector.f90`.

Referenced by `IXFcreate_detector()`, and `IXFupdate_detector()`.

**5.21.1.19** subroutine `IXMdetector::IXFupdate_detector` (type(`IXTdetector`)  
*det*, integer(i4b),dimension(:) *good*, integer(i4b),dimension(:) *total*,  
 integer(i4b),dimension(:) ,intent(in) *checksum*, integer(i4b),dimension(:)  
 ,intent(in) *det\_no*, real(dp),dimension(:),intent(in)  
*delay\_time*, real(dp),dimension(:),intent(in) *dead\_time*,  
 real(dp),dimension(:),intent(in) *theta*, real(dp),dimension(:),intent(in) *L2*,  
 real(dp),dimension(:),intent(in) *phi*, integer(i4b),dimension(:),intent(in)  
*group\_index*, integer(i4b),dimension(:),intent(in) *det\_type*,  
 type(`IXTdet_he3`),intent(in),optional *det\_he3*, type(`IXTdet_`  
`solid`),intent(in),optional *det\_solid*, integer(i4b),dimension(:),intent(in)  
*type\_index*, type(`IXTstatus`) *status*)

Definition at line 551 of file `IXMdetector.f90`.

References `IXFcreate_detector()`, and `IXFset_detector()`.

Referenced by `IXMeffdet_index::IXFpopulate_effdet_index()`.

Here is the call graph for this function:



## 5.22 IXMdiffraction\_instrument Namespace Reference

### Classes

- struct `IXTdiffraction_instrument`
- interface `IXFget_ptr`
- interface `IXFget_emode`

### Functions

- subroutine `get_ptr` (`di_ptr`)
- subroutine `get_emode` (`d_inst`, `status`, `emode`, `efixed`)
- subroutine `IXFdestroy_diffraction_instrument` (`arg`, `status`)
- subroutine `IXFoperation_run_diffraction_instrument` (`op`, `field`, `arg`, `status`)
- subroutine `IXFget_diffraction_instrument` (`diffraction_instrument`, `status`, `wout`)
- subroutine `IXFcreate_diffraction_instrument` (`diffraction_instrument`, `status`)
- subroutine `IXFset_diffraction_instrument` (`diffraction_instrument`, `status`, `ref`)
- subroutine `IXFcheck_diffraction_instrument` (`di`, `status`)
- subroutine `IXFpopulate_diffraction_instrument` (`di`, `dso`, `status`)
- subroutine `IXFget_ptr_diffraction_instrument` (`diffraction_instrument`)

### Variables

- `type(IXTdiffraction_instrument)`, `target`, `save diff_inst`

### 5.22.1 Function Documentation

**5.22.1.1** subroutine `IXMdiffraction_instrument::get_emode` (`type(IXTdiffraction_instrument)` *d\_inst*, `type(IXTstatus)` *status*, `integer(i4b)` *emode*, `real(dp)`, optional *efixed*)

Definition at line 49 of file `IXMdiffraction_instrument.f90`.

References `IXMtype_definitions::IXCundef_dp`.

**5.22.1.2** subroutine `IXMdiffraction_instrument::get_ptr` (`type(IXTdiffraction_instrument)`, `pointer` *di\_ptr*)

Definition at line 43 of file `IXMdiffraction_instrument.f90`.

References `diff_inst`.

**5.22.1.3** subroutine `IXMdiffraction_instrument::IXFcheck_diffraction_instrument` (`type(IXTdiffraction_instrument)` *di*, `type(IXTStatus)` *status*)

Definition at line 150 of file `IXMdiffraction_instrument.f90`.

Referenced by `IXFset_diffraction_instrument()`.

**5.22.1.4** subroutine `IXMdiffraction_instrument::IXFcreate_diffraction_instrument` (type(`IXTdiffraction_instrument`),intent(out) *diffraction\_instrument*, type(`IXTstatus`),intent(inout) *status*)

Definition at line 104 of file `IXMdiffraction_instrument.f90`.

**5.22.1.5** subroutine `IXMdiffraction_instrument::IXFdestroy_diffraction_instrument` (type(`IXTdiffraction_instrument`) *arg*, type(`IXTstatus`) *status*)

Definition at line 64 of file `IXMdiffraction_instrument.f90`.

**5.22.1.6** subroutine `IXMdiffraction_instrument::IXFget_diffraction_instrument` (type(`IXTdiffraction_instrument`),intent(in) *diffraction\_instrument*, type(`IXTstatus`),intent(inout) *status*, type(`IXTdiffraction_instrument`),intent(out),optional *wout*)

Definition at line 90 of file `IXMdiffraction_instrument.f90`.

**5.22.1.7** subroutine `IXMdiffraction_instrument::IXFget_ptr_diffraction_instrument` (type(`IXTdiffraction_instrument`) *diffraction\_instrument*)

Definition at line 172 of file `IXMdiffraction_instrument.f90`.

**5.22.1.8** subroutine `IXMdiffraction_instrument::IXFoperation_run_diffraction_instrument` (type(`IXToperation`) *op*, character(len=\*) *field*, type(`IXTdiffraction_instrument`) *arg*, type(`IXTstatus`) *status*)

Definition at line 72 of file `IXMdiffraction_instrument.f90`.

**5.22.1.9** subroutine `IXMdiffraction_instrument::IXFpopulate_diffraction_instrument` (type(`IXTdiffraction_instrument`) *di*, type(`IXTdata_source`) *dso*, type(`IXTstatus`) *status*)

Definition at line 156 of file `IXMdiffraction_instrument.f90`.

Referenced by `IXMinstrument::IXFpopulate_instrument()`.

**5.22.1.10** subroutine `IXMdiffraction_instrument::IXFset_diffraction_instrument` (type(`IXTdiffraction_instrument`),intent(inout) *diffraction\_instrument*, type(`IXTstatus`),intent(inout) *status*, type(`IXTdiffraction_instrument`),intent(in),optional *ref*)

Definition at line 119 of file `IXMdiffraction_instrument.f90`.

References `IXFcheck_diffraction_instrument()`.

Here is the call graph for this function:



## 5.22.2 Variable Documentation

### 5.22.2.1 `type(IXMdiffraction_instrument),target,save IXMdiffraction_instrument::diff_inst`

Definition at line 33 of file IXMdiffraction\_instrument.f90.

Referenced by `get_ptr()`.

## 5.23 IXMeffdet\_index Namespace Reference

### Classes

- struct IXTeffdet\_index

### Functions

- subroutine IXFoperation\_run\_effdet\_index (op, field, arg, status)
- subroutine IXFcreate\_effdet\_index (effdet\_index, good\_index, total\_index, status)
- subroutine IXFcheck\_effdet\_index (arg, status)
- subroutine IXFdestroy\_effdet\_index (effdet\_index, status)
- subroutine IXFset\_effdet\_index (effdet\_index, status, good\_index, total\_index, ref)
- subroutine IXFget\_effdet\_index (effdet\_index, status, good\_index, total\_index, wout)
- subroutine IXFget\_ptr\_effdet\_index (effdet\_index, good\_index, total\_index)
- subroutine IXFget\_alloc\_effdet\_index (effdet\_index, status, good\_index, total\_index, wout)
- subroutine IXFpopulate\_effdet\_index (effdet\_index, eff\_det, wsbrg\_ptr, spe\_ptr, det\_full, status)

### 5.23.1 Function Documentation

#### 5.23.1.1 subroutine IXMeffdet\_index::IXFcheck\_effdet\_index (type(IXTeffdet\_index) *arg*, type(IXTstatus) *status*)

Definition at line 76 of file IXMeffdet\_index.f90.

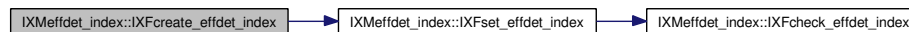
Referenced by IXFset\_effdet\_index().

#### 5.23.1.2 subroutine IXMeffdet\_index::IXFcreate\_effdet\_index (type(IXTeffdet\_index) *effdet\_index*, integer(i4b),dimension(:),intent(in) *good\_index*, integer(i4b),dimension(:),intent(in) *total\_index*, type(IXTstatus) *status*)

Definition at line 58 of file IXMeffdet\_index.f90.

References IXFset\_effdet\_index().

Here is the call graph for this function:



#### 5.23.1.3 subroutine IXMeffdet\_index::IXFdestroy\_effdet\_index (type(IXTeffdet\_index) *effdet\_index*, type(IXTstatus) *status*)

Definition at line 89 of file IXMeffdet\_index.f90.

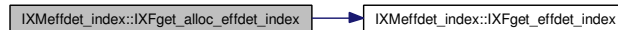


**5.23.1.4** subroutine IXMeffdet\_index::IXFget\_alloc\_effdet\_index  
 (type(IXTeffdet\_index),intent(in) *effdet\_index*, type(IXTstatus)  
*status*, integer(i4b),dimension(:),optional,allocatable *good\_index*,  
 integer(i4b),dimension(:),optional,allocatable *total\_index*,  
 type(IXTeffdet\_index),intent(out) *wout*)

Definition at line 185 of file IXMeffdet\_index.f90.

References IXFget\_effdet\_index().

Here is the call graph for this function:



**5.23.1.5** subroutine IXMeffdet\_index::IXFget\_effdet\_index  
 (type(IXTeffdet\_index),intent(in) *effdet\_index*, type(IXTstatus)  
*status*, integer(i4b),dimension(:),intent(out),optional *good\_index*,  
 integer(i4b),dimension(:),intent(out),optional *total\_index*,  
 type(IXTeffdet\_index),intent(out),optional *wout*)

Definition at line 151 of file IXMeffdet\_index.f90.

Referenced by IXFget\_alloc\_effdet\_index().

**5.23.1.6** subroutine IXMeffdet\_index::IXFget\_ptr\_effdet\_index  
 (type(IXTeffdet\_index) *effdet\_index*,  
 integer(i4b),dimension(:),optional,pointer *good\_index*,  
 integer(i4b),dimension(:),optional,pointer *total\_index*)

Definition at line 170 of file IXMeffdet\_index.f90.

**5.23.1.7** subroutine IXMeffdet\_index::IXFoperation\_run\_effdet\_index  
 (type(IXToperation) *op*, character(len=\*) *field*, type(IXTeffdet\_index)  
*arg*, type(IXTstatus) *status*)

Definition at line 37 of file IXMeffdet\_index.f90.

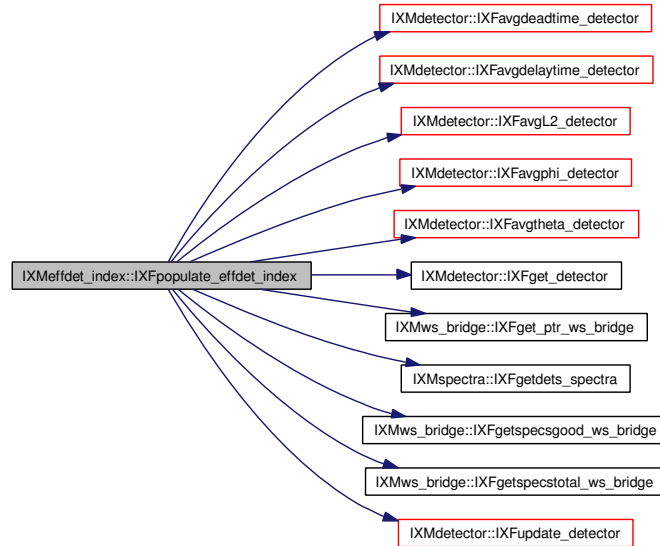
**5.23.1.8** subroutine IXMeffdet\_index::IXFpopulate\_effdet\_index  
 (type(IXTeffdet\_index) *effdet\_index*, type(IXTdetector) *eff\_det*,  
 type(IXTws\_bridge),pointer *wsbrg\_ptr*, type(IXTspectra),intent(in)  
*spe\_ptr*, type(IXTdetector),intent(in) *det\_full*, type(IXTstatus) *status*)

Definition at line 206 of file IXMeffdet\_index.f90.

References IXMdetector::IXFavgdeadttime\_detector(), IXMdetector::IXFavgdelaytime\_detector(), IXMdetector::IXFavgL2\_detector(), IXMdetector::IXFavgphi\_detector(), IXMdetector::IXFavgtheta\_detector(), IXMdetector::IXFget\_detector(), IXMws\_bridge::IXFget\_ptr\_ws\_bridge(), IXMspectra::IXFgetdets\_spectra(), IXMws\_bridge::IXFgetspecsgood\_ws\_bridge(), IXMws\_bridge::IXFgetspecstotal\_ws\_bridge(), and IXMdetector::IXFupdate\_detector().

Referenced by IXMworkspace::IXFpopulate\_workspace().

Here is the call graph for this function:



**5.23.1.9** subroutine `IXMeffdet_index::IXFset_effdet_index`  
 (type(`IXTeffdet_index`),intent(inout) *effdet\_index*, type(`IXTstatus`)  
*status*, integer(`i4b`),dimension(:),intent(in),optional *good\_index*,  
 integer(`i4b`),dimension(:),intent(in),optional *total\_index*,  
 type(`IXTeffdet_index`),intent(in),optional *ref*)

Definition at line 111 of file `IXMeffdet_index.f90`.

References `IXFcheck_effdet_index()`.

Referenced by `IXFcreate_effdet_index()`.

Here is the call graph for this function:



## 5.24 IXMefficiency Namespace Reference

### Functions

- `real(dp) EFF (En, atms)`
- `real(dp) EFFCHB (a, b, c, m, x)`

#### 5.24.1 Function Documentation

##### 5.24.1.1 `real(dp) IXMefficiency::EFF (real(dp) En, real(dp) atms)`

Definition at line 4 of file IXMefficiency.f90.

References IXMtype\_definitions::d0, EFFCHB(), and IXMtype\_definitions::pi\_dp.

Referenced by IXMdataset\_2d::IXFeffic\_dataset\_2d().

Here is the call graph for this function:



##### 5.24.1.2 `real(dp) IXMefficiency::EFFCHB (real(dp) a, real(dp) b, real(dp),dimension(:) c, integer(i4b) m, real(dp) x)`

Definition at line 89 of file IXMefficiency.f90.

References IXMtype\_definitions::d0.

Referenced by EFF().

## 5.25 IXMerrorcodes Namespace Reference

### Variables

- integer, parameter IXCfacility\_none = 1
- integer, parameter IXCfacility\_libisis = 2
- integer, parameter IXCfacility\_bindings = 3
- integer, parameter IXCfacility\_memory = 4
- integer, parameter IXCfacility\_wrapvar = 5
- integer, parameter IXCfacility\_file = 6
- integer, parameter IXCfacility\_max\_name\_len = 20
- character(len=IXCfacility\_max\_name\_len), parameter IXCfacility\_names = (/ 'NONE ', 'LIBISIS ', 'BINDINGS', 'MEMORY ', 'WRAPVAR ', 'FILE ' /)
- integer, parameter IXCerr\_unknown = 1
- integer, parameter IXCerr\_outofmem = 2
- integer, parameter IXCerr\_invparam = 3
- integer, parameter IXCerr\_filenotfound = 4
- integer, parameter IXCerr\_max\_name\_len = 30
- character(len=IXCerr\_max\_name\_len), parameter IXCerr\_names = (/ 'Unknown ', 'Out of Memory ', 'Invalid Argument/Parameter', 'File Not Found ' /)

### 5.25.1 Variable Documentation

#### 5.25.1.1 integer,parameter IXMerrorcodes::IXCerr\_filenotfound = 4

Definition at line 55 of file IXMerrorcodes.f90.

#### 5.25.1.2 integer,parameter IXMerrorcodes::IXCerr\_invparam = 3

Definition at line 54 of file IXMerrorcodes.f90.

#### 5.25.1.3 integer,parameter IXMerrorcodes::IXCerr\_max\_name\_len = 30

Definition at line 57 of file IXMerrorcodes.f90.

#### 5.25.1.4 character(len=IXCerr\_max\_name\_len),parameter IXMerrorcodes::IXCerr\_names = (/ 'Unknown ', 'Out of Memory ', 'Invalid Argument/Parameter', 'File Not Found ' /)

Definition at line 59 of file IXMerrorcodes.f90.

#### 5.25.1.5 integer,parameter IXMerrorcodes::IXCerr\_outofmem = 2

Definition at line 53 of file IXMerrorcodes.f90.

#### 5.25.1.6 integer,parameter IXMerrorcodes::IXCerr\_unknown = 1

Definition at line 52 of file IXMerrorcodes.f90.

**5.25.1.7 integer,parameter IXMerrorcodes::IXCfacility\_bindings = 3**

Definition at line 30 of file IXMerrorcodes.f90.

**5.25.1.8 integer,parameter IXMerrorcodes::IXCfacility\_file = 6**

Definition at line 36 of file IXMerrorcodes.f90.

**5.25.1.9 integer,parameter IXMerrorcodes::IXCfacility\_libisis = 2**

Definition at line 28 of file IXMerrorcodes.f90.

**5.25.1.10 integer,parameter IXMerrorcodes::IXCfacility\_max\_name\_len = 20**

Definition at line 38 of file IXMerrorcodes.f90.

**5.25.1.11 integer,parameter IXMerrorcodes::IXCfacility\_memory = 4**

Definition at line 32 of file IXMerrorcodes.f90.

**5.25.1.12 character(len=IXCfacility\_max\_name\_len),parameter  
IXMerrorcodes::IXCfacility\_names = (/ 'NONE ', 'LIBISIS ',  
'BINDINGS', 'MEMORY ', 'WRAPVAR ', 'FILE ' /)**

Definition at line 41 of file IXMerrorcodes.f90.

**5.25.1.13 integer,parameter IXMerrorcodes::IXCfacility\_none = 1**

Definition at line 27 of file IXMerrorcodes.f90.

**5.25.1.14 integer,parameter IXMerrorcodes::IXCfacility\_wrapvar = 5**

Definition at line 34 of file IXMerrorcodes.f90.

## 5.26 IXMfermi\_chopper Namespace Reference

### Classes

- struct IXTfermi\_chopper
- interface IXFtransmission\_fermi\_chopper
- interface IXFtransmission\_odd\_fermi\_chopper
- interface IXFvariance\_fermi\_chopper
- interface IXFvariance\_odd\_fermi\_chopper

### Functions

- subroutine IXFdestroy\_fermi\_chopper (arg, status)
- subroutine IXFoperation\_run\_fermi\_chopper (op, field, arg, status)
- subroutine IXFcreate\_Fermi\_chopper (fc, name, distance, frequency, period, radius, curvature, slit\_width,&slit\_spacing, blade\_width, width, height, energy, status)
- subroutine IXFset\_Fermi\_chopper (fc, status, name, distance, frequency, period, radius, curvature, slit\_width, slit\_spacing, blade\_width, width, height, energy, ref)
- subroutine IXFget\_Fermi\_chopper (fc, status, name, distance, frequency, period, radius, curvature, slit\_width,&slit\_spacing, blade\_width, width, height, energy, wout)
- subroutine IXFcheck\_Fermi\_chopper (fc, status)
- real(dp) IXFtransmission\_internal\_ei\_fermi\_chopper (c, status)
- real(dp) IXFtransmission\_scalar\_ei\_fermi\_chopper (c, energy, status)
- real(dp) IXFtransmission\_vector\_ei\_fermi\_chopper (c, energy, status)
- real(dp) IXFtransmission\_internal\_ei\_odd\_fermi\_chopper (c, status)
- real(dp) IXFtransmission\_scalar\_ei\_odd\_fermi\_chopper (c, energy, status)
- real(dp) IXFtransmission\_vector\_ei\_odd\_fermi\_chopper (c, energy, status)
- real(dp) IXFtransmission\_gen\_fermi\_chopper (c, sigma, energy, status)
- real(dp) IXFvariance\_internal\_ei\_fermi\_chopper (c, status)
- real(dp) IXFvariance\_scalar\_ei\_fermi\_chopper (c, energy, status)
- real(dp) IXFvariance\_vector\_ei\_fermi\_chopper (c, energy, status)
- real(dp) IXFvariance\_internal\_ei\_odd\_fermi\_chopper (c, status)
- real(dp) IXFvariance\_scalar\_ei\_odd\_fermi\_chopper (c, energy, status)
- real(dp) IXFvariance\_vector\_ei\_odd\_fermi\_chopper (c, energy, status)
- real(dp) IXFvariance\_gen\_fermi\_chopper (c, sigma, energy, status)

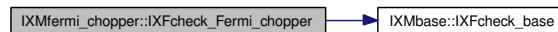
### 5.26.1 Function Documentation

#### 5.26.1.1 subroutine IXMfermi\_chopper::IXFcheck\_Fermi\_chopper (type(IXTfermi\_chopper) *fc*, type(IXTstatus) *status*)

Definition at line 254 of file IXMfermi\_chopper.f90.

References IXMbase::IXFcheck\_base().

Here is the call graph for this function:



**5.26.1.2** subroutine IXMfermi\_chopper::IXFcreate\_Fermi\_chopper  
 (type(IXTFermi\_chopper),intent(out) *fc*, character(len=\*),intent(in) *name*, real(dp),intent(in) *distance*, real(dp),intent(in) *frequency*, real(dp),intent(in) *period*, real(dp),intent(in) *radius*, real(dp),intent(in) *curvature*, real(dp),intent(in) *slit\_width*, &,intent(in) *slit\_spacing*, real(dp),intent(in) *blade\_width*, real(dp),intent(in) *width*, real(dp),intent(in) *height*, real(dp),intent(in) *energy*, type(IXTstatus),intent(inout) *status*)

Definition at line 122 of file IXMfermi\_chopper.f90.

References IXFset\_Fermi\_chopper().

Here is the call graph for this function:



**5.26.1.3** subroutine IXMfermi\_chopper::IXFdestroy\_fermi\_chopper  
 (type(IXTFermi\_chopper) *arg*, type(IXTstatus) *status*)

Definition at line 79 of file IXMfermi\_chopper.f90.

**5.26.1.4** subroutine IXMfermi\_chopper::IXFget\_Fermi\_chopper  
 (type(IXTFermi\_chopper),intent(in) *fc*, type(IXTstatus),intent(inout) *status*, character(len=\*),intent(out),optional *name*, real(dp),intent(out),optional *distance*, real(dp),intent(out),optional *frequency*, real(dp),intent(out),optional *period*, real(dp),intent(out),optional *radius*, real(dp),intent(out),optional *curvature*, real(dp),intent(out),optional *slit\_width*, &,intent(out),optional *slit\_spacing*, real(dp),intent(out),optional *blade\_width*, real(dp),intent(out),optional *width*, real(dp),intent(out),optional *height*, real(dp),intent(out),optional *energy*, type(IXTFermi\_chopper),intent(out),optional *wout*)

Definition at line 210 of file IXMfermi\_chopper.f90.

**5.26.1.5** subroutine IXMfermi\_chopper::IXFoperation\_run\_fermi\_chopper  
 (type(IXToperation) *op*, character(len=\*) *field*, type(IXTFermi\_chopper) *arg*, type(IXTstatus) *status*)

Definition at line 94 of file IXMfermi\_chopper.f90.

**5.26.1.6** subroutine IXMfermi\_chopper::IXFset\_Fermi\_chopper  
 (type(IXTFermi\_chopper),intent(inout) *fc*, type(IXTstatus),intent(inout) *status*, character(len=\*),intent(in),optional *name*,  
 real(dp),intent(in),optional *distance*, real(dp),intent(in),optional *frequency*, real(dp),intent(in),optional *period*, real(dp),intent(in),optional *radius*, real(dp),intent(in),optional *curvature*, real(dp),intent(in),optional *slit\_width*, real(dp),intent(in),optional *slit\_spacing*,  
 real(dp),intent(in),optional *blade\_width*, real(dp),intent(in),optional *width*, real(dp),intent(in),optional *height*, real(dp),intent(in),optional *energy*, type(IXTFermi\_chopper),intent(in),optional *ref*)

Definition at line 148 of file IXMfermi\_chopper.f90.

Referenced by IXFcreate\_Fermi\_chopper().

**5.26.1.7** real(dp) IXMfermi\_chopper::IXFtransmission\_gen\_fermi\_chopper  
 (type(IXTFermi\_chopper) *c*, logical,intent(in) *sigma*, real(dp),dimension(:),  
 intent(in) *energy*, type(IXTstatus) *status*)

Definition at line 369 of file IXMfermi\_chopper.f90.

References IXMneutron\_constants::c\_v\_to\_emev, and IXMtype\_definitions::fourpi\_dp.

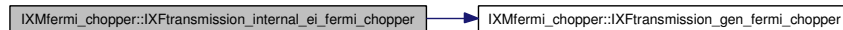
Referenced by IXFtransmission\_internal\_ei\_fermi\_chopper(), IXFtransmission\_internal\_ei\_odd\_fermi\_chopper(), IXFtransmission\_scalar\_ei\_fermi\_chopper(), IXFtransmission\_scalar\_ei\_odd\_fermi\_chopper(), IXFtransmission\_vector\_ei\_fermi\_chopper(), and IXFtransmission\_vector\_ei\_odd\_fermi\_chopper().

**5.26.1.8** real(dp) IXMfermi\_chopper::IXFtransmission\_internal\_ei\_fermi\_chopper (type(IXTFermi\_chopper) *c*, type(IXTstatus) *status*)

Definition at line 273 of file IXMfermi\_chopper.f90.

References IXFtransmission\_gen\_fermi\_chopper().

Here is the call graph for this function:

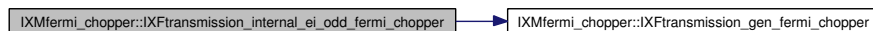


**5.26.1.9** real(dp) IXMfermi\_chopper::IXFtransmission\_internal\_ei\_odd\_fermi\_chopper (type(IXTFermi\_chopper) *c*, type(IXTstatus) *status*)

Definition at line 319 of file IXMfermi\_chopper.f90.

References IXFtransmission\_gen\_fermi\_chopper().

Here is the call graph for this function:





**5.26.1.10** `real(dp) IXMfermi_chopper::IXFtransmission_scalar_ei_fermi_chopper (type(IXTfermi_chopper) c, real(dp) energy, type(IXTstatus) status)`

Definition at line 289 of file IXMfermi\_chopper.f90.

References IXFtransmission\_gen\_fermi\_chopper().

Here is the call graph for this function:

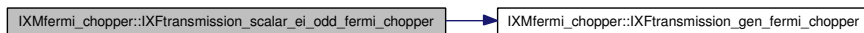


**5.26.1.11** `real(dp) IXMfermi_chopper::IXFtransmission_scalar_ei_odd_fermi_chopper (type(IXTfermi_chopper) c, real(dp) energy, type(IXTstatus) status)`

Definition at line 335 of file IXMfermi\_chopper.f90.

References IXFtransmission\_gen\_fermi\_chopper().

Here is the call graph for this function:



**5.26.1.12** `real(dp) IXMfermi_chopper::IXFtransmission_vector_ei_fermi_chopper (type(IXTfermi_chopper) c, real(dp),dimension(:) energy, type(IXTstatus) status)`

Definition at line 306 of file IXMfermi\_chopper.f90.

References IXFtransmission\_gen\_fermi\_chopper().

Here is the call graph for this function:

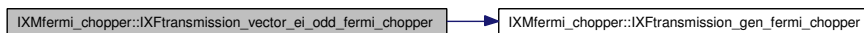


**5.26.1.13** `real(dp) IXMfermi_chopper::IXFtransmission_vector_ei_odd_fermi_chopper (type(IXTfermi_chopper) c, real(dp),dimension(:) energy, type(IXTstatus) status)`

Definition at line 352 of file IXMfermi\_chopper.f90.

References IXFtransmission\_gen\_fermi\_chopper().

Here is the call graph for this function:



**5.26.1.14** `real(dp) IXMfermi_chopper::IXFvariance_gen_fermi_chopper`  
 (`type(IXTfermi_chopper) c`, `logical,intent(in) sigma`,  
`real(dp),dimension(:) ,intent(in) energy`, `type(IXTstatus) status`)

Definition at line 511 of file IXMfermi\_chopper.f90.

References IXMneutron\_constants::c\_v\_to\_emev, and IXMtype\_definitions::fourpi\_dp.

Referenced by IXFvariance\_internal\_ei\_fermi\_chopper(), IXFvariance\_internal\_ei\_odd\_fermi\_chopper(), IXFvariance\_scalar\_ei\_fermi\_chopper(), IXFvariance\_scalar\_ei\_odd\_fermi\_chopper(), IXFvariance\_vector\_ei\_fermi\_chopper(), and IXFvariance\_vector\_ei\_odd\_fermi\_chopper().

**5.26.1.15** `real(dp) IXMfermi_chopper::IXFvariance_internal_ei_fermi_chopper`  
 (`type(IXTfermi_chopper) c`, `type(IXTstatus) status`)

Definition at line 418 of file IXMfermi\_chopper.f90.

References IXFvariance\_gen\_fermi\_chopper().

Here is the call graph for this function:

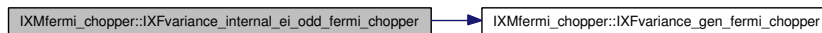


**5.26.1.16** `real(dp) IXMfermi_chopper::IXFvariance_internal_ei_odd_fermi_chopper`  
 (`type(IXTfermi_chopper) c`, `type(IXTstatus) status`)

Definition at line 463 of file IXMfermi\_chopper.f90.

References IXFvariance\_gen\_fermi\_chopper().

Here is the call graph for this function:



**5.26.1.17** `real(dp) IXMfermi_chopper::IXFvariance_scalar_ei_fermi_chopper`  
 (`type(IXTfermi_chopper) c`, `real(dp) energy`, `type(IXTstatus) status`)

Definition at line 434 of file IXMfermi\_chopper.f90.

References IXFvariance\_gen\_fermi\_chopper().

Here is the call graph for this function:

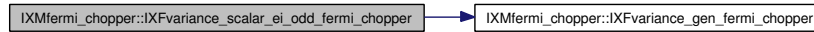


**5.26.1.18** `real(dp) IXMfermi_chopper::IXFvariance_scalar_ei_odd_fermi_chopper (type(IXTfermi_chopper) c, real(dp) energy, type(IXTstatus) status)`

Definition at line 479 of file IXMfermi\_chopper.f90.

References IXFvariance\_gen\_fermi\_chopper().

Here is the call graph for this function:



**5.26.1.19** `real(dp) IXMfermi_chopper::IXFvariance_vector_ei_fermi_chopper (type(IXTfermi_chopper) c, real(dp),dimension(:) energy, type(IXTstatus) status)`

Definition at line 451 of file IXMfermi\_chopper.f90.

References IXFvariance\_gen\_fermi\_chopper().

Here is the call graph for this function:

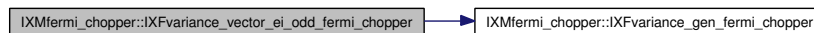


**5.26.1.20** `real(dp) IXMfermi_chopper::IXFvariance_vector_ei_odd_fermi_chopper (type(IXTfermi_chopper) c, real(dp),dimension(:) energy, type(IXTstatus) status)`

Definition at line 496 of file IXMfermi\_chopper.f90.

References IXFvariance\_gen\_fermi\_chopper().

Here is the call graph for this function:



## 5.27 IXMfileio Namespace Reference

### Classes

- struct `IXTfileio`
- interface `IXBfileWrite`
- interface `IXBfileRead`
- interface `IXBfileReadAlloc`
- interface `IXBfileReadPtr`
- interface `IXFfile_read`
- interface `IXFfile_write`
- interface `IXFfile_type`

### Functions

- subroutine `nexus_error` (`nx_stat`, `message`, `status`)
- logical `IXFfile_check_type` (`file_name`, `fctype`)
- integer(i4b) `IXFfile_get_type` (`file_name`)
- subroutine `IXFfile_open` (`fio`, `file_name`, `mode`, `status`)
- subroutine `IXFfile_close` (`fio`, `status`)
- subroutine `IXBfileMakeGroup` (`fio`, `name`, `class`)
- subroutine `IXBfileOpenGroup` (`fio`, `name`, `class`)
- subroutine `IXBfileCloseGroup` (`fio`, `name`)
- subroutine `IXBfileWriteChar` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileReadChar` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileWriteInteger` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileReadInteger` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileWriteReal` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileReadReal` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileWriteLogical` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileReadLogical` (`fio`, `name`, `value`, `status`)
- subroutine `IXFfile_read_fileio` (`fio`, `value`, `name`, `status`)
- subroutine `IXFfile_write_fileio` (`fio`, `value`, `name`, `status`)
- subroutine `IXBfindGroup` (`fio`, `group_name`, `group_class`, `found`, `status`)

### Variables

- integer, parameter `IXC_READ = 1`
- integer, parameter `IXC_WRITE = 2`
- integer, parameter `IXC_RDWR = IXC_READ+IXC_WRITE`
- integer, parameter `IXC_CREATE = 4`
- integer, parameter `IXC_CREATEXML = 8`
- integer, parameter `IXCfile_type_ascii = 1`
- integer, parameter `IXCfile_type_binary = 2`

## 5.27.1 Function Documentation

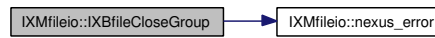
### 5.27.1.1 subroutine IXMfileio::IXBfileCloseGroup (type(IXTfileio) *fio*, character(len=\*) *name*)

Definition at line 163 of file IXMfileio.f90.

References NXUmodule::file\_id, nexus\_error(), and NXUmodule::status.

Referenced by IXMoperation::IXFoperationFinish().

Here is the call graph for this function:



### 5.27.1.2 subroutine IXMfileio::IXBfileMakeGroup (type(IXTfileio) *fio*, character(len=\*) *name*, character(len=\*) *class*)

Definition at line 123 of file IXMfileio.f90.

References NXUmodule::file\_id, nexus\_error(), and NXUmodule::status.

Referenced by IXMoperation::IXFoperationStart().

Here is the call graph for this function:



### 5.27.1.3 subroutine IXMfileio::IXBfileOpenGroup (type(IXTfileio) *fio*, character(len=\*) *name*, character(len=\*) *class*)

Definition at line 143 of file IXMfileio.f90.

References NXUmodule::file\_id, nexus\_error(), and NXUmodule::status.

Referenced by IXMoperation::IXFoperationStart().

Here is the call graph for this function:



### 5.27.1.4 subroutine IXMfileio::IXBfileReadChar (type(IXTfileio) *fio*, character(len=\*) *name*, character(len=\*) *value*, type(IXTstatus) *status*)

Definition at line 192 of file IXMfileio.f90.

References NXUmodule::file\_id, nexus\_error(), and NXUmodule::status.

Here is the call graph for this function:



**5.27.1.5** subroutine **IXMfileio::IXBfileReadInteger** (*type(IXTfileio) fio*,  
*character(len=\*) name*, *integer(i4b) value*, *type(IXTstatus) status*)

Definition at line 222 of file IXMfileio.f90.

References NXUmodule::file\_id, nexus\_error(), and NXUmodule::status.

Here is the call graph for this function:



**5.27.1.6** subroutine **IXMfileio::IXBfileReadLogical** (*type(IXTfileio) fio*,  
*character(len=\*) name*, *logical value*, *type(IXTstatus) status*)

Definition at line 286 of file IXMfileio.f90.

References NXUmodule::file\_id, nexus\_error(), and NXUmodule::status.

Here is the call graph for this function:



**5.27.1.7** subroutine **IXMfileio::IXBfileReadReal** (*type(IXTfileio) fio*,  
*character(len=\*) name*, *real(dp) value*, *type(IXTstatus) status*)

Definition at line 252 of file IXMfileio.f90.

References NXUmodule::file\_id, nexus\_error(), and NXUmodule::status.

Here is the call graph for this function:



**5.27.1.8** subroutine **IXMfileio::IXBfileWriteChar** (*type(IXTfileio) fio*,  
*character(len=\*) name*, *character(len=\*) value*, *type(IXTstatus) status*)

Definition at line 177 of file IXMfileio.f90.

References NXUmodule::file\_id, nexus\_error(), and NXUmodule::status.

Here is the call graph for this function:

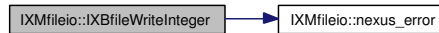


**5.27.1.9** subroutine `IXMfileio::IXBfileWriteInteger` (`type(IXTfileio) fio`,  
`character(len=*) name`, `integer(i4b) value`, `type(IXTstatus) status`)

Definition at line 207 of file `IXMfileio.f90`.

References `NXUmodule::file_id`, `nexus_error()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.27.1.10** subroutine `IXMfileio::IXBfileWriteLogical` (`type(IXTfileio) fio`,  
`character(len=*) name`, `logical value`, `type(IXTstatus) status`)

Definition at line 267 of file `IXMfileio.f90`.

References `NXUmodule::file_id`, `nexus_error()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.27.1.11** subroutine `IXMfileio::IXBfileWriteReal` (`type(IXTfileio) fio`,  
`character(len=*) name`, `real(dp) value`, `type(IXTstatus) status`)

Definition at line 237 of file `IXMfileio.f90`.

References `NXUmodule::file_id`, `nexus_error()`, and `NXUmodule::status`.

Here is the call graph for this function:



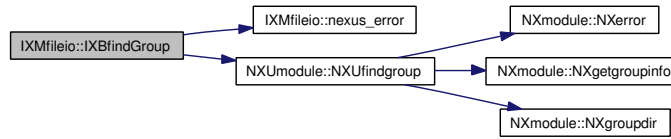
**5.27.1.12** subroutine `IXMfileio::IXBfindGroup` (`type(IXTfileio) fio`,  
`character(len=*) group_name`, `character(len=*) group_class`, `logical found`,  
`type(IXTstatus) status`)

Definition at line 330 of file `IXMfileio.f90`.

References `NXUmodule::file_id`, `nexus_error()`, `NXUmodule::NXUfindgroup()`, and `NXUmodule::status`.

Referenced by `IXMoperation::IXFoperationArrayInit()`.

Here is the call graph for this function:



**5.27.1.13** logical IXMfileio::IXFfile\_check\_type (character(len=\*),intent(in) file\_name, integer(i4b),intent(in) ftype)

Definition at line 61 of file IXMfileio.f90.

**5.27.1.14** subroutine IXMfileio::IXFfile\_close (type(IXTfileio) fio, type(IXTstatus) status)

Definition at line 110 of file IXMfileio.f90.

References NXUmodule::file\_id, nexus\_error(), and NXUmodule::status.

Here is the call graph for this function:



**5.27.1.15** integer(i4b) IXMfileio::IXFfile\_get\_type (character(len=\*),intent(in) file\_name)

Definition at line 68 of file IXMfileio.f90.

References IXCfile\_type\_ascii, and IXCfile\_type\_binary.

**5.27.1.16** subroutine IXMfileio::IXFfile\_open (type(IXTfileio),intent(out) fio, character(len=\*) file\_name, integer mode, type(IXTstatus) status)

Definition at line 83 of file IXMfileio.f90.

References NXUmodule::file\_id, IXC\_CREATE, IXC\_CREATEXML, IXC\_RDWR, IXC\_READ, IXC\_WRITE, nexus\_error(), and NXUmodule::status.

Here is the call graph for this function:



**5.27.1.17** subroutine IXMfileio::IXFfile\_read\_fileio (type(IXTfileio) fio, type(IXTfileio) value, character(len=\*) name, type(IXTstatus) status)

Definition at line 306 of file IXMfileio.f90.

References NXUmodule::file\_id.



**5.27.1.18** subroutine `IXMfileio::IXFfile_write_fileio` (`type(IXTfileio) fio`,  
`type(IXTfileio) value`, `character(len=*) name`, `type(IXTstatus) status`)

Definition at line 318 of file `IXMfileio.f90`.

References `NXUmodule::file_id`.

**5.27.1.19** subroutine `IXMfileio::nexus_error` (`integer nx_stat`, `character(len=*) message`, `type(IXTstatus) status`)

Definition at line 51 of file `IXMfileio.f90`.

References `NXUmodule::status`.

Referenced by `IXBfileCloseGroup()`, `IXBfileMakeGroup()`, `IXBfileOpenGroup()`, `IXBfileReadChar()`, `IXBfileReadInteger()`, `IXBfileReadLogical()`, `IXBfileReadReal()`, `IXBfileWriteChar()`, `IXBfileWriteInteger()`, `IXBfileWriteLogical()`, `IXBfileWriteReal()`, `IXBfindGroup()`, `IXFfile_close()`, and `IXFfile_open()`.

## 5.27.2 Variable Documentation

**5.27.2.1** integer,parameter `IXMfileio::IXC_CREATE = 4`

Definition at line 12 of file `IXMfileio.f90`.

Referenced by `IXFfile_open()`.

**5.27.2.2** integer,parameter `IXMfileio::IXC_CREATEXML = 8`

Definition at line 12 of file `IXMfileio.f90`.

Referenced by `IXFfile_open()`.

**5.27.2.3** integer,parameter `IXMfileio::IXC_RDWR = IXC_READ+IXC_WRITE`

Definition at line 12 of file `IXMfileio.f90`.

Referenced by `IXFfile_open()`.

**5.27.2.4** integer,parameter `IXMfileio::IXC_READ = 1`

Definition at line 12 of file `IXMfileio.f90`.

Referenced by `IXFfile_open()`.

**5.27.2.5** integer,parameter `IXMfileio::IXC_WRITE = 2`

Definition at line 12 of file `IXMfileio.f90`.

Referenced by `IXFfile_open()`.

**5.27.2.6 integer,parameter IXMfileio::IXCfile\_\_type\_\_ascii = 1**

Definition at line 46 of file IXMfileio.f90.

Referenced by IXfile\_get\_type().

**5.27.2.7 integer,parameter IXMfileio::IXCfile\_\_type\_\_binary = 2**

Definition at line 47 of file IXMfileio.f90.

Referenced by IXfile\_get\_type().

## 5.28 IXMgeometry Namespace Reference

### Classes

- struct `IXTgeometry`
- interface `IXFvolume`
- interface `IXFsolid_angle`

### Functions

- subroutine `IXFdestroy_geometry` (`arg`, `status`)
- subroutine `IXFcreate_geometry` (`geometry`, `translation`, `orientation`, `shape`, `status`)
- subroutine `IXFoperation_run_geometry` (`op`, `field`, `arg`, `status`)
- subroutine `IXFset_geometry` (`geometry`, `status`, `translation`, `orientation`, `shape`, `ref`)
- subroutine `IXFget_geometry` (`geometry`, `status`, `translation`, `orientation`, `shape`, `wout`)
- subroutine `IXFcreate_class_geometry` (`self`, `geometry`)
- subroutine `IXFcreate_attributes_geometry` (`self`, `status`, `translation`, `orientation`, `shape`)
- subroutine `IXFcheck_geometry` (`geometry`, `status`)
- `real(dp)` `IXFvolume_geometry` (`geometry`)
- `real(dp)` `IXFsolid_angle_geometry` (`geometry`, `vp`)
- `real(dp)`, `dimension(:,:)`, `pointer IXFarea_vertices_geometry` (`geometry`, `or`, `t`)
- subroutine `IXFprojarea_vertices_geometry` (`geometry`, `or`, `t`, `projection`, `px`, `py`, `status`, `radius`, `axes`)

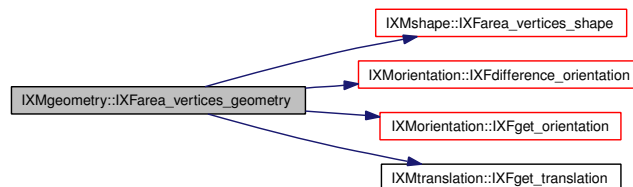
### 5.28.1 Function Documentation

5.28.1.1 `real(dp),dimension(:,:)` ,`pointer IXMgeometry::IXFarea_vertices_geometry` (`type(IXTgeometry)`,`intent(in) geometry`, `type(IXTOrientation)`,`intent(in) or`, `type(IXTtranslation)`,`intent(in) t`)

Definition at line 246 of file `IXMgeometry.f90`.

References `IXMshape::IXFarea_vertices_shape()`, `IXMOrientation::IXFdifference_orientation()`, `IXMOrientation::IXFget_orientation()`, `IXMtranslation::IXFget_translation()`, and `NXUmodule::status`.

Here is the call graph for this function:



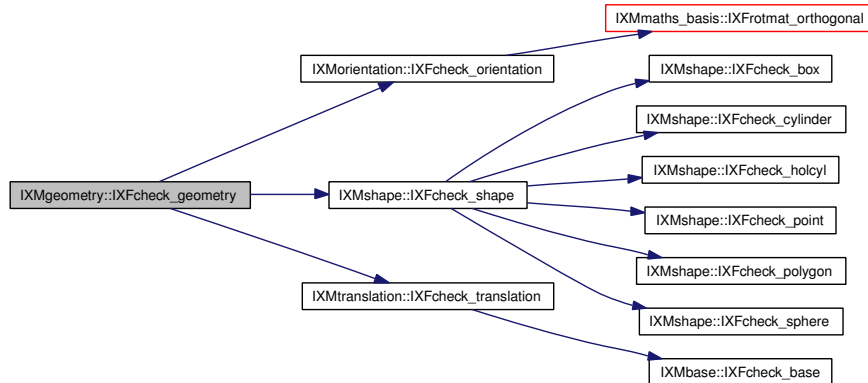
### 5.28.1.2 subroutine IXMgeometry::IXFcheck\_geometry (type(IXTgeometry) geometry, type(IXTstatus) status)

Definition at line 209 of file IXMgeometry.f90.

References IXMorientation::IXFcheck\_orientation(), IXMshape::IXFcheck\_shape(), IXMtranslation::IXFcheck\_translation(), and NXUmodule::status.

Referenced by IXFset\_geometry().

Here is the call graph for this function:

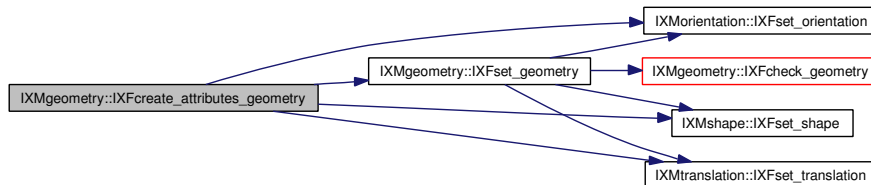


### 5.28.1.3 subroutine IXMgeometry::IXFcreate\_attributes\_geometry (type(IXTgeometry),intent(inout) self, type(IXTstatus) status, type(IXTtranslation),intent(in),optional translation, type(IXTorientation),intent(in),optional orientation, type(IXTshape),intent(in),optional shape)

Definition at line 170 of file IXMgeometry.f90.

References IXFset\_geometry(), IXMorientation::IXFset\_orientation(), IXMshape::IXFset\_shape(), IXMtranslation::IXFset\_translation(), and NXUmodule::status.

Here is the call graph for this function:



### 5.28.1.4 subroutine IXMgeometry::IXFcreate\_class\_geometry (type(IXTgeometry),intent(out) self, type(IXTgeometry),intent(in) geometry)

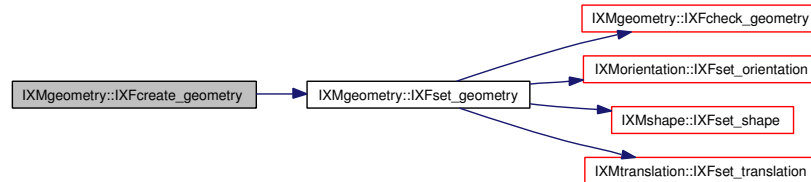
Definition at line 163 of file IXMgeometry.f90.

**5.28.1.5** subroutine `IXMgeometry::IXFcreate_geometry` (`type(IXTgeometry)` *geometry*, `type(IXTtranslation)` *translation*, `type(IXTorientation)` *orientation*, `type(IXTshape)` *shape*, `type(IXTstatus)` *status*)

Definition at line 78 of file `IXMgeometry.f90`.

References `IXFset_geometry()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.28.1.6** subroutine `IXMgeometry::IXFdestroy_geometry` (`type(IXTgeometry)` *arg*, `type(IXTstatus)` *status*)

Definition at line 66 of file `IXMgeometry.f90`.

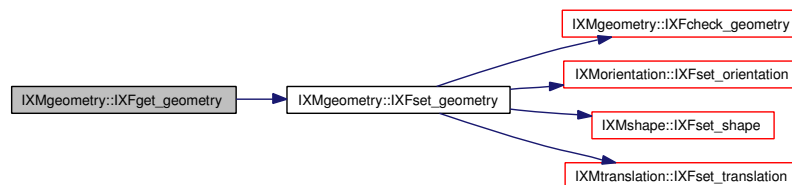
References `NXUmodule::status`.

**5.28.1.7** subroutine `IXMgeometry::IXFget_geometry` (`type(IXTgeometry)`, `intent(in)` *geometry*, `type(IXTstatus)` *status*, `type(IXTtranslation)`, `intent(out)`, optional *translation*, `type(IXTorientation)`, `intent(out)`, optional *orientation*, `type(IXTshape)`, `intent(out)`, optional *shape*, `type(IXTgeometry)`, `intent(out)`, optional *wout*)

Definition at line 139 of file `IXMgeometry.f90`.

References `IXFset_geometry()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.28.1.8** subroutine `IXMgeometry::IXFoperation_run_geometry` (`type(IXToperation)` *op*, `character(len=*)` *field*, `type(IXTgeometry)` *arg*, `type(IXTstatus)` *status*)

Definition at line 92 of file `IXMgeometry.f90`.

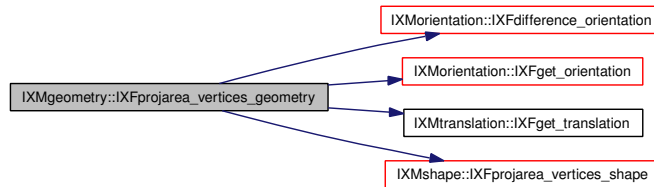
References `NXUmodule::status`.

**5.28.1.9** subroutine `IXMgeometry::IXFprojarea_vertices_geometry`  
 (type(`IXTgeometry`),intent(in) *geometry*, type(`IXTorientation`),intent(in) *or*, type(`IXTtranslation`),intent(in) *t*, integer(`i4b`),intent(in) *projection*, real(`dp`),dimension(:),pointer *px*, real(`dp`),dimension(:),pointer *py*, type(`IXTstatus`) *status*, real(`dp`),intent(in),optional *radius*, integer(`i4b`),dimension(2),intent(in),optional *axes*)

Definition at line 268 of file `IXMgeometry.f90`.

References `IXMorientation::IXFdifference_orientation()`, `IXMorientation::IXFget_orientation()`, `IXMtranslation::IXFget_translation()`, `IXMshape::IXFprojarea_vertices_shape()`, and `NXU-module::status`.

Here is the call graph for this function:



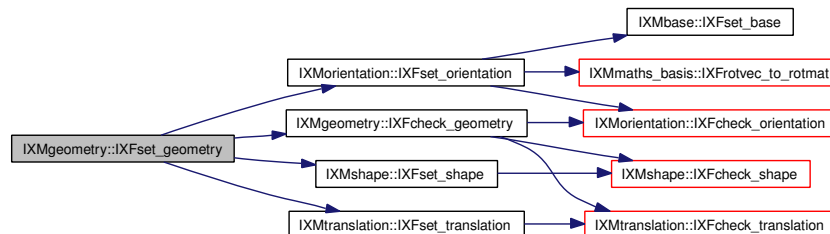
**5.28.1.10** subroutine `IXMgeometry::IXFset_geometry`  
 (type(`IXTgeometry`),intent(inout) *geometry*, type(`IXTstatus`) *status*, type(`IXTtranslation`),intent(in),optional *translation*, type(`IXTorientation`),intent(in),optional *orientation*, type(`IXTshape`),intent(in),optional *shape*, type(`IXTgeometry`),intent(in),optional *ref*)

Definition at line 114 of file `IXMgeometry.f90`.

References `IXFcheck_geometry()`, `IXMorientation::IXFset_orientation()`, `IXMshape::IXFset_shape()`, `IXMtranslation::IXFset_translation()`, and `NXU-module::status`.

Referenced by `IXFcreate_attributes_geometry()`, `IXFcreate_geometry()`, and `IXFget_geometry()`.

Here is the call graph for this function:

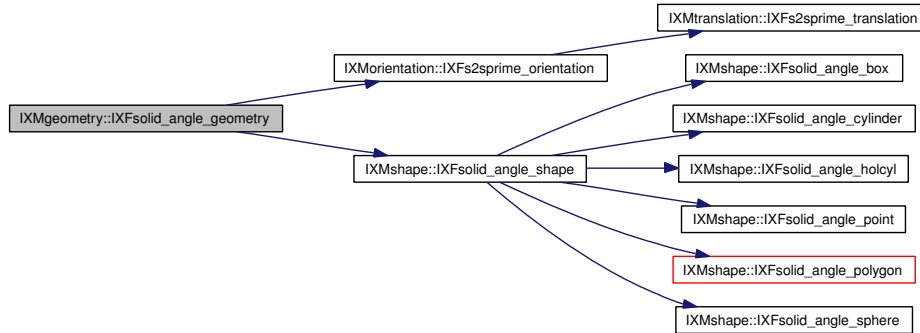


**5.28.1.11** `real(dp) IXMgeometry::IXFsolid_angle_geometry`  
 (`type(IXTgeometry),intent(in) geometry, real(dp),dimension(3)`  
`,intent(in) vp`)

Definition at line 231 of file IXMgeometry.f90.

References IXMorientation::IXFs2sprime\_orientation(), and IXMshape::IXFsolid\_angle\_shape().

Here is the call graph for this function:

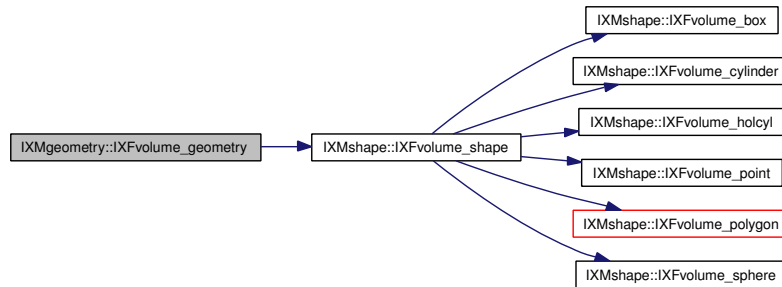


**5.28.1.12** `real(dp) IXMgeometry::IXFvolume_geometry`  
 (`type(IXTgeometry),intent(in) geometry`)

Definition at line 222 of file IXMgeometry.f90.

References IXMshape::IXFvolume\_shape().

Here is the call graph for this function:



## 5.29 IXMgroup Namespace Reference

### Classes

- struct `IXTgroup`

### Functions

- subroutine `IXFoperation_run_group` (`op`, `field`, `arg`, `status`)
- subroutine `IXFset_group` (`opt`, `status`, `name`, `ref`)
- subroutine `IXFget_group` (`opt`, `status`, `name`, `wout`)
- subroutine `IXFcheck_group` (`opt`, `status`)
- subroutine `IXFdestroy_group` (`opt`, `status`)
- subroutine `IXFcreate_group` (`opt`, `name`, `status`)

### Variables

- integer, parameter `IXCinvalid_id_group` = -1
- integer, parameter `IXCno_parent_group` = 0

### 5.29.1 Function Documentation

**5.29.1.1** subroutine `IXMgroup::IXFcheck_group` (`type(IXTgroup)` *opt*,  
`type(IXTstatus)` *status*)

Definition at line 72 of file `IXMgroup.f90`.

**5.29.1.2** subroutine `IXMgroup::IXFcreate_group` (`type(IXTgroup)`,`intent(out)` *opt*,  
`character(len=*)`,`optional` *name*, `type(IXTstatus)` *status*)

Definition at line 84 of file `IXMgroup.f90`.

References `IXFset_group()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.29.1.3** subroutine `IXMgroup::IXFdestroy_group` (`type(IXTgroup)` *opt*,  
`type(IXTstatus)` *status*)

Definition at line 78 of file `IXMgroup.f90`.

**5.29.1.4** subroutine `IXMgroup::IXFget_group` (`type(IXTgroup)`,`intent(inout)`  
*opt*, `type(IXTstatus)` *status*, `character(len=*)`,`optional` *name*,  
`type(IXTgroup)`,`optional` *wout*)

Definition at line 60 of file `IXMgroup.f90`.



References NXUmodule::status.

**5.29.1.5** subroutine IXMgroup::IXFoperation\_run\_group (type(IXToperation) *op*, character(len=\*) *field*, type(IXTgroup) *arg*, type(IXTstatus) *status*)

Definition at line 32 of file IXMgroup.f90.

References NXUmodule::status.

**5.29.1.6** subroutine IXMgroup::IXFset\_group (type(IXTgroup),intent(inout) *opt*, type(IXTstatus) *status*, character(len=\*),optional *name*, type(IXTgroup),intent(in),optional *ref*)

Definition at line 47 of file IXMgroup.f90.

References NXUmodule::status.

Referenced by IXFcreate\_group().

## 5.29.2 Variable Documentation

**5.29.2.1** integer,parameter IXMgroup::IXCinvalid\_id\_group = -1

Definition at line 13 of file IXMgroup.f90.

Referenced by IXMgroups::index\_byid(), IXMgroups::index\_byname(), IXMgroups::parent\_id\_byid(), IXMgroups::parent\_id\_byname(), and IXMgroups::remove\_byid().

**5.29.2.2** integer,parameter IXMgroup::IXCno\_parent\_group = 0

Definition at line 14 of file IXMgroup.f90.

Referenced by IXMgroups::IXFadd\_groups(), IXMgroups::member\_byid(), and IXMgroups::parent\_list\_byid().

## 5.30 IXMgroups Namespace Reference

### Classes

- struct `IXTgroups`
- interface `IXFparent_id_groups`
- interface `IXFparent_groups`
- interface `IXFis_member_groups`
- interface `IXFremove_groups`
- interface `IXFparent_list_groups`
- interface `IXFmember_list_groups`

### Functions

- subroutine `IXFoperation_run_groups` (`op`, `field`, `arg`, `status`)
- subroutine `IXFset_groups` (`opt`, `status`, `names`, `ref`)
- subroutine `IXFget_groups` (`opt`, `status`, `names`, `wout`)
- subroutine `IXFcheck_groups` (`opt`, `status`)
- subroutine `IXFdestroy_groups` (`opt`, `status`)
- subroutine `IXFcreate_groups` (`opt`, `names`, `status`)
- subroutine `IXFadd_groups` (`groups`, `name`, `parent`, `status`)
- character(`len=long_len`) `IXFname_groups` (`groups`, `id`)
- subroutine `parent_list_byid` (`groups`, `id`, `id_list`, `n`, `status`)
- subroutine `parent_list_byname` (`groups`, `name`, `id_list`, `n`, `status`)
- subroutine `member_list_byid` (`groups`, `id`, `id_list`, `n`, `status`)
- subroutine `member_list_byname` (`groups`, `name`, `id_list`, `n`, `status`)
- subroutine `remove_byid` (`groups`, `id`, `status`)
- subroutine `remove_byname` (`groups`, `name`, `status`)
- subroutine `IXFprint_groups` (`groups`, `id_list`, `n`, `status`)
- integer `index_byname` (`groups`, `name`)
- integer `index_byid` (`groups`, `id`)
- integer `IXFid_groups` (`groups`, `name`)
- integer `parent_id_byname` (`groups`, `name`)
- integer `parent_id_byid` (`groups`, `id`)
- character(`len=long_len`) `parent_byname` (`groups`, `name`)
- character(`len=long_len`) `parent_byid` (`groups`, `id`)
- logical `member_byid` (`groups`, `this_id`, `test_id`)
- logical `member_byname` (`groups`, `this_name`, `test_name`)

### 5.30.1 Function Documentation

#### 5.30.1.1 integer IXMgroups::index\_byid (type(IXTgroups),intent(in) *groups*, integer,intent(in) *id*)

Definition at line 300 of file `IXMgroups.f90`.

References `IXMgroup::IXCinvalid_id_group`.

Referenced by `IXFname_groups()`, `parent_byid()`, `parent_id_byid()`, and `remove_byid()`.

### 5.30.1.2 integer IXMgroups::index\_byname (type(IXTgroups),intent(in) groups, character(len=\*),intent(in) name)

Definition at line 285 of file IXMgroups.f90.

References IXMgroup::IXCinvalid\_id\_group.

Referenced by parent\_byname(), and parent\_id\_byname().

### 5.30.1.3 subroutine IXMgroups::IXFadd\_groups (type(IXTgroups) groups, character(len=\*) name, character(len=\*) parent, type(IXTstatus) status)

Definition at line 133 of file IXMgroups.f90.

References IXMgroup::IXCno\_parent\_group, IXFid\_groups(), and NXUmodule::status.

Here is the call graph for this function:



### 5.30.1.4 subroutine IXMgroups::IXFcheck\_groups (type(IXTgroups) opt, type(IXTstatus) status)

Definition at line 111 of file IXMgroups.f90.

### 5.30.1.5 subroutine IXMgroups::IXFcreate\_groups (type(IXTgroups),intent(out) opt, character(len=\*),dimension(:),optional names, type(IXTstatus) status)

Definition at line 123 of file IXMgroups.f90.

References IXFset\_groups(), and NXUmodule::status.

Here is the call graph for this function:



### 5.30.1.6 subroutine IXMgroups::IXFdestroy\_groups (type(IXTgroups) opt, type(IXTstatus) status)

Definition at line 117 of file IXMgroups.f90.

### 5.30.1.7 subroutine IXMgroups::IXFget\_groups (type(IXTgroups),intent(inout) opt, type(IXTstatus) status, character(len=\*),dimension(:),optional names, type(IXTgroups),optional wout)

Definition at line 100 of file IXMgroups.f90.

References NXUmodule::status.

### 5.30.1.8 integer IXMgroups::IXFid\_groups (type(IXTgroups),intent(in) groups, character(len=\*),intent(in) name)

Definition at line 317 of file IXMgroups.f90.

Referenced by IXFadd\_groups(), member\_byname(), member\_list\_byname(), parent\_list\_byname(), and remove\_byname().

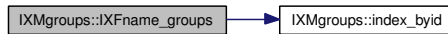
### 5.30.1.9 character(len=long\_len) IXMgroups::IXFname\_groups (type(IXTgroups),intent(in) groups, integer,intent(in) id)

Definition at line 162 of file IXMgroups.f90.

References index\_byid().

Referenced by IXFprint\_groups(), parent\_byid(), and parent\_byname().

Here is the call graph for this function:



### 5.30.1.10 subroutine IXMgroups::IXFoperation\_run\_groups (type(IXToperation) op, character(len=\*) field, type(IXTgroups) arg, type(IXTstatus) status)

Definition at line 75 of file IXMgroups.f90.

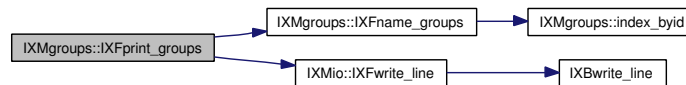
References NXUmodule::status.

### 5.30.1.11 subroutine IXMgroups::IXFprint\_groups (type(IXTgroups),intent(in) groups, integer,dimension(n),intent(in) id\_list, integer,intent(in) n, type(IXTstatus) status)

Definition at line 273 of file IXMgroups.f90.

References IXFname\_groups(), IXMio::IXFwrite\_line(), and NXUmodule::status.

Here is the call graph for this function:



### 5.30.1.12 subroutine IXMgroups::IXFset\_groups (type(IXTgroups),intent(inout) opt, type(IXTstatus) status, character(len=\*),dimension(:),optional names, type(IXTgroups),intent(in),optional ref)

Definition at line 89 of file IXMgroups.f90.

Referenced by IXFcreate\_groups().

### 5.30.1.13 logical IXMgroups::member\_byid (type(IXTgroups),intent(in) groups, integer,intent(in) this\_id, integer,intent(in) test\_id)

Definition at line 393 of file IXMgroups.f90.

References IXMgroup::IXCno\_parent\_group.

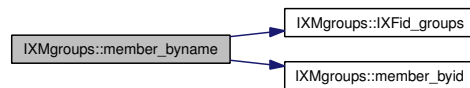
Referenced by member\_byname().

### 5.30.1.14 logical IXMgroups::member\_byname (type(IXTgroups),intent(in) groups, character(len=\*),intent(in) this\_name, character(len=\*),intent(in) test\_name)

Definition at line 411 of file IXMgroups.f90.

References IXFid\_groups(), and member\_byid().

Here is the call graph for this function:



### 5.30.1.15 subroutine IXMgroups::member\_list\_byid (type(IXTgroups),intent(in) groups, integer,intent(in) id, integer,dimension(:) ,intent(out) id\_list, integer,intent(out) n, type(IXTstatus) status)

Definition at line 214 of file IXMgroups.f90.

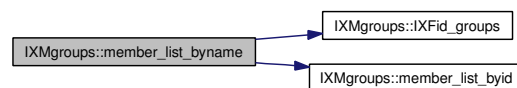
Referenced by member\_list\_byname().

### 5.30.1.16 subroutine IXMgroups::member\_list\_byname (type(IXTgroups),intent(in) groups, character(len=\*),intent(in) name, integer,dimension(:) ,intent(out) id\_list, integer,intent(out) n, type(IXTstatus) status)

Definition at line 232 of file IXMgroups.f90.

References IXFid\_groups(), member\_list\_byid(), and NXUmodule::status.

Here is the call graph for this function:

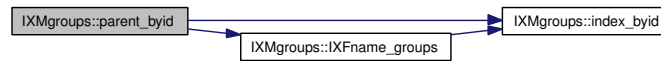


### 5.30.1.17 character(len=long\_len) IXMgroups::parent\_byid (type(IXTgroups),intent(in) groups, integer,intent(in) id)

Definition at line 381 of file IXMgroups.f90.

References index\_byid(), and IXFname\_groups().

Here is the call graph for this function:

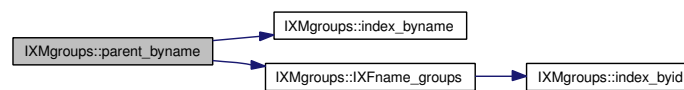


#### 5.30.1.18 `character(len=long_len) IXMgroups::parent_byname` `(type(IXTgroups),intent(in) groups, character(len=*),intent(in) name)`

Definition at line 367 of file IXMgroups.f90.

References `index_byname()`, and `IXFname_groups()`.

Here is the call graph for this function:



#### 5.30.1.19 `integer IXMgroups::parent_id_byid` `(type(IXTgroups),intent(in) groups,` `integer,intent(in) id)`

Definition at line 352 of file IXMgroups.f90.

References `index_byid()`, and `IXMgroup::IXCinvalid_id_group`.

Here is the call graph for this function:



#### 5.30.1.20 `integer IXMgroups::parent_id_byname` `(type(IXTgroups),intent(in)` `groups, character(len=*),intent(in) name)`

Definition at line 338 of file IXMgroups.f90.

References `index_byname()`, and `IXMgroup::IXCinvalid_id_group`.

Here is the call graph for this function:



#### 5.30.1.21 `subroutine IXMgroups::parent_list_byid` `(type(IXTgroups),intent(in)` `groups, integer,intent(in) id, integer,dimension(:) ,intent(out) id_list,` `integer,intent(out) n, type(IXTstatus) status)`

Definition at line 175 of file IXMgroups.f90.

References IXMgroup::IXCno\_parent\_group, and NXUmodule::status.

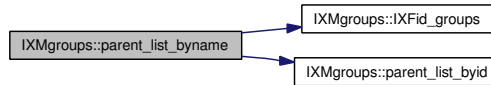
Referenced by parent\_list\_byname().

**5.30.1.22** subroutine IXMgroups::parent\_list\_byname (type(IXTgroups),intent(in) groups, character(len=\*),intent(in) name, integer,dimension(:),intent(out) id\_list, integer,intent(out) n, type(IXTstatus) status)

Definition at line 199 of file IXMgroups.f90.

References IXFid\_groups(), parent\_list\_byid(), and NXUmodule::status.

Here is the call graph for this function:



**5.30.1.23** subroutine IXMgroups::remove\_byid (type(IXTgroups),intent(inout) groups, integer,intent(in) id, type(IXTstatus) status)

Definition at line 246 of file IXMgroups.f90.

References index\_byid(), IXMgroup::IXCinvalid\_id\_group, and NXUmodule::status.

Referenced by remove\_byname().

Here is the call graph for this function:

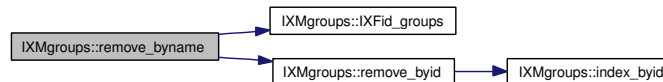


**5.30.1.24** subroutine IXMgroups::remove\_byname (type(IXTgroups),intent(inout) groups, character(len=\*),intent(in) name, type(IXTstatus) status)

Definition at line 263 of file IXMgroups.f90.

References IXFid\_groups(), remove\_byid(), and NXUmodule::status.

Here is the call graph for this function:



## 5.31 IXMhistory Namespace Reference

### Classes

- struct `IXThistory`
- interface `IXFfile_read`
- interface `IXFfile_write`
- interface `IXFcheck`

### Functions

- subroutine `IXFcheck_history` (`arg`, `status`)
- subroutine `IXFcheck_array_history` (`w1`, `s`)
- subroutine `IXFfile_read_history` (`value`, `fio`, `name`, `status`)
- subroutine `IXFfile_write_history` (`value`, `fio`, `name`, `status`)
- subroutine `IXFcreate_history` (`history`, `entry`, `status`)
- subroutine `IXFdestroy_history` (`history`, `status`)
- subroutine `IXFset_history` (`history`, `status`, `entry`, `ref`)
- subroutine `IXFget_history` (`history`, `status`, `entry`, `wout`)
- subroutine `IXFget_ptr_history` (`history`, `entry`)
- subroutine `IXFadditem_history` (`hist`, `entry`, `status`)

### Variables

- integer(`i4b`), parameter `IXChist_initlength = 5`

#### 5.31.1 Function Documentation

- 5.31.1.1** subroutine `IXMhistory::IXFadditem_history` (`type`(`IXThistory`) *hist*, `character`(`len=*`),`intent`(`in`) *entry*, `type`(`IXTstatus`) *status*)

Definition at line 199 of file `IXMhistory.f90`.

References `IXChist_initlength`, and `NXUmodule::status`.

- 5.31.1.2** subroutine `IXMhistory::IXFcheck_array_history` (`type`(`IXThistory`),`dimension`(`:`) *w1*, `type`(`IXTstatus`) *s*)

Definition at line 52 of file `IXMhistory.f90`.

- 5.31.1.3** subroutine `IXMhistory::IXFcheck_history` (`type`(`IXThistory`) *arg*, `type`(`IXTstatus`) *status*)

Definition at line 38 of file `IXMhistory.f90`.

References `NXUmodule::status`.

Referenced by `IXFset_history()`.

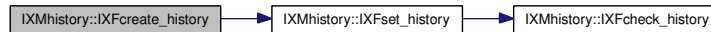


**5.31.1.4** subroutine `IXMhistory::IXFcreate_history` (`type(IXThistory) history`, `character(len=*)`, `dimension(:)`, `intent(in)`, `allocatable entry`, `type(IXTstatus) status`)

Definition at line 86 of file `IXMhistory.f90`.

References `IXFset_history()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.31.1.5** subroutine `IXMhistory::IXFdestroy_history` (`type(IXThistory) history`, `type(IXTstatus) status`)

Definition at line 118 of file `IXMhistory.f90`.

**5.31.1.6** subroutine `IXMhistory::IXFfile_read_history` (`type(IXThistory) value`, `type(IXTfileio) fio`, `character(len=*) name`, `type(IXTstatus) status`)

Definition at line 62 of file `IXMhistory.f90`.

References `IXMio::IXFwrite_line()`, and `NXUmodule::status`.

Here is the call graph for this function:

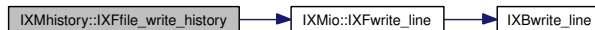


**5.31.1.7** subroutine `IXMhistory::IXFfile_write_history` (`type(IXThistory) value`, `type(IXTfileio) fio`, `character(len=*) name`, `type(IXTstatus) status`)

Definition at line 71 of file `IXMhistory.f90`.

References `IXMio::IXFwrite_line()`, and `NXUmodule::status`.

Here is the call graph for this function:

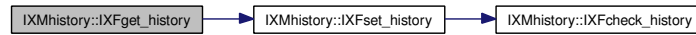


**5.31.1.8** subroutine `IXMhistory::IXFget_history` (`type(IXThistory)`, `intent(in) history`, `type(IXTstatus) status`, `character(len=*)`, `dimension(:)`, `intent(out)`, `optional`, `allocatable entry`, `type(IXThistory)`, `intent(out)`, `optional wout`)

Definition at line 163 of file `IXMhistory.f90`.

References `IXFset_history()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.31.1.9** subroutine `IXMhistory::IXFget_ptr_history` (`type(IXThistory)`, `target history`, `character(len=long_len)`, `dimension(:)`, `optional`, `pointer entry`)

Definition at line 188 of file `IXMhistory.f90`.

**5.31.1.10** subroutine `IXMhistory::IXFset_history` (`type(IXThistory)`, `intent(inout) history`, `type(IXTstatus) status`, `character(len=*)`, `dimension(:)`, `intent(in)`, `optional`, `allocatable entry`, `type(IXThistory)`, `intent(in)`, `optional ref`)

Definition at line 139 of file `IXMhistory.f90`.

References `IXFcheck_history()`, and `NXUmodule::status`.

Referenced by `IXFcreate_history()`, and `IXFget_history()`.

Here is the call graph for this function:



## 5.31.2 Variable Documentation

**5.31.2.1** `integer(i4b)`, `parameter` `IXMhistory::IXChist_initlength = 5`

Definition at line 20 of file `IXMhistory.f90`.

Referenced by `IXFadditem_history()`.

## 5.32 IXMindex Namespace Reference

### Classes

- interface `IXFlower_index`
- interface `IXFupper_index`

### Functions

- `integer(i4b) lower_index_dp (arr, val)`
- `integer(i4b) lower_index_sp (arr, val)`
- `integer(i4b) lower_index_i4b (arr, val)`
- `integer(i4b) upper_index_dp (arr, val)`
- `integer(i4b) upper_index_sp (arr, val)`
- `integer(i4b) upper_index_i4b (arr, val)`

### 5.32.1 Function Documentation

**5.32.1.1** `integer(i4b) IXMindex::lower_index_dp (real(dp),dimension(:),intent(in) arr, real(dp),intent(in) val)`

Definition at line 15 of file `IXMindex.f90`.

**5.32.1.2** `integer(i4b) IXMindex::lower_index_i4b (integer(i4b),dimension(:),intent(in) arr, integer(i4b),intent(in) val)`

Definition at line 120 of file `IXMindex.f90`.

**5.32.1.3** `integer(i4b) IXMindex::lower_index_sp (real(sp),dimension(:),intent(in) arr, real(sp),intent(in) val)`

Definition at line 73 of file `IXMindex.f90`.

**5.32.1.4** `integer(i4b) IXMindex::upper_index_dp (real(dp),dimension(:),intent(in) arr, real(dp),intent(in) val)`

Definition at line 168 of file `IXMindex.f90`.

**5.32.1.5** `integer(i4b) IXMindex::upper_index_i4b (integer(i4b),dimension(:),intent(in) arr, integer(i4b),intent(in) val)`

Definition at line 263 of file `IXMindex.f90`.

**5.32.1.6** `integer(i4b) IXMindex::upper_index_sp (real(sp),dimension(:),intent(in) arr, real(sp),intent(in) val)`

Definition at line 221 of file `IXMindex.f90`.

## 5.33 IXMinput\_source Namespace Reference

### Classes

- struct `IXTinput_source`
- interface `IXFsize`

### Functions

- subroutine `IXFoperation_run_input_source` (`op`, `field`, `arg`, `status`)
- subroutine `IXFset_input_source` (`opt`, `status`, `ref`)
- subroutine `IXFget_input_source` (`opt`, `status`, `wout`)
- subroutine `IXFcheck_input_source` (`opt`, `status`)
- subroutine `IXFdestroy_input_source` (`opt`, `status`)
- subroutine `IXFcreate_input_source` (`opt`, `status`)
- subroutine `size_i_array` (`handle`, `item_name`, `item_size`, `status`)
- subroutine `size_i` (`handle`, `item_name`, `item_size`, `status`)

### Variables

- integer, parameter `IXCtype_unknown = 0`
- integer, parameter `IXCtype_isisraw = 1`
- integer, parameter `IXCtype_nexus = 2`

#### 5.33.1 Function Documentation

**5.33.1.1** subroutine `IXMinput_source::IXFcheck_input_source`  
(`type(IXTinput_source) opt`, `type(IXTstatus) status`)

Definition at line 82 of file `IXMinput_source.f90`.

**5.33.1.2** subroutine `IXMinput_source::IXFcreate_input_source`  
(`type(IXTinput_source)`, `intent(out) opt`, `type(IXTstatus) status`)

Definition at line 94 of file `IXMinput_source.f90`.

References `IXFset_input_source()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.33.1.3** subroutine `IXMinput_source::IXFdestroy_input_source`  
(`type(IXTinput_source) opt`, `type(IXTstatus) status`)

Definition at line 88 of file `IXMinput_source.f90`.

**5.33.1.4** subroutine IXMinput\_source::IXFget\_input\_source  
 (type(IXTinput\_source),intent(inout) *opt*, type(IXTstatus) *status*,  
 type(IXTinput\_source),optional *wout*)

Definition at line 72 of file IXMinput\_source.f90.

References IXFset\_input\_source(), and NXUmodule::status.

Here is the call graph for this function:



**5.33.1.5** subroutine IXMinput\_source::IXFoperation\_run\_input\_source  
 (type(IXToperation) *op*, character(len=\*) *field*, type(IXTinput\_source)  
*arg*, type(IXTstatus) *status*)

Definition at line 48 of file IXMinput\_source.f90.

References NXUmodule::status.

**5.33.1.6** subroutine IXMinput\_source::IXFset\_input\_source  
 (type(IXTinput\_source),intent(inout) *opt*, type(IXTstatus) *status*,  
 type(IXTinput\_source),intent(in),optional *ref*)

Definition at line 62 of file IXMinput\_source.f90.

References NXUmodule::status.

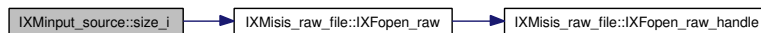
Referenced by IXFcreate\_input\_source(), and IXFget\_input\_source().

**5.33.1.7** subroutine IXMinput\_source::size\_i (type(IXTinput\_source) *handle*,  
 character(len=\*) *item\_name*, integer *item\_size*, type(IXTstatus),target  
*status*)

Definition at line 113 of file IXMinput\_source.f90.

References IXCtype\_isisraw, IXMisis\_raw\_file::IXFopen\_raw(), and NXUmodule::status.

Here is the call graph for this function:

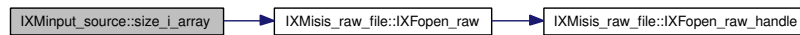


**5.33.1.8** subroutine IXMinput\_source::size\_i\_array (type(IXTinput\_source)  
*handle*, character(len=\*) *item\_name*, integer,dimension(:) *item\_size*,  
 type(IXTstatus),target *status*)

Definition at line 102 of file IXMinput\_source.f90.

References IXMisis\_raw\_file::IXFopen\_raw(), and NXUmodule::status.

Here is the call graph for this function:



## 5.33.2 Variable Documentation

### 5.33.2.1 integer,parameter IXMinput\_source::IXCtype\_isisraw = 1

Definition at line 16 of file IXMinput\_source.f90.

Referenced by size\_i().

### 5.33.2.2 integer,parameter IXMinput\_source::IXCtype\_nexus = 2

Definition at line 17 of file IXMinput\_source.f90.

### 5.33.2.3 integer,parameter IXMinput\_source::IXCtype\_unknown = 0

Definition at line 15 of file IXMinput\_source.f90.

## 5.34 IXMinstrument Namespace Reference

### Classes

- struct `IXTinstrument`

### Functions

- subroutine `IXFoperation_run_instrument` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcheck_instrument` (`inst`, `status`)
- subroutine `IXFdestroy_instrument` (`inst`, `status`)
- subroutine `IXFcreate_instrument` (`inst`, `name`, `source`, `moderator`, `apertures`, `attenuators`, `spectra`, `status`)
- subroutine `IXFset_instrument` (`inst`, `status`, `name`, `source`, `moderator`, `apertures`, `attenuators`, `spectra`, `detector`, `ref`)
- subroutine `IXFget_instrument` (`inst`, `status`, `inst_type`, `name`, `source`, `moderator`, `apertures`, `attenuators`, `spectra`, `detector`, `wout`)
- subroutine `IXFget_ptr_instrument` (`inst`, `ci`, `spectra`, `detector`)
- subroutine `IXFunitsinfo_instrument` (`inst`, `status`, `emode`, `L1`, `efixed`)
- subroutine `IXFei_info_instrument` (`inst`, `L1`, `status`)
- logical `IXFcompare_instrument` (`inst1`, `inst2`)
- logical `IXFwhitecompare_instrument` (`sample`, `whitebeam`)
- subroutine `IXFpopulate_instrument` (`inst`, `inputsource`, `dso`, `status`, `det_map`, `mon_map`)
- subroutine `findusedspectra` (`inst`, `tot_used`, `status`, `det_map`, `mon_map`)
- subroutine `finduseddetectors` (`inst`, `tot_used`, `status`, `det_map`, `mon_map`)

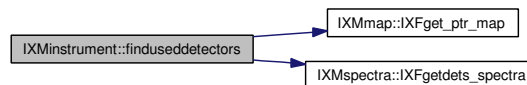
### 5.34.1 Function Documentation

- 5.34.1.1** subroutine `IXMinstrument::finduseddetectors`  
 (`type(IXTinstrument)`,`intent(in) inst`, `integer(i4b)`,`dimension(:),allocatable tot_used`, `type(IXTstatus) status`, `type(IXTmap),intent(in),optional det_map`, `type(IXTmap),intent(in),optional mon_map`)

Definition at line 600 of file `IXMinstrument.f90`.

References `IXMmap::IXFget_ptr_map()`, `IXMspectra::IXFgetdets_spectra()`, and `NXUmodule::status`.

Here is the call graph for this function:



- 5.34.1.2** subroutine `IXMinstrument::findusedspectra`  
 (`type(IXTinstrument)`,`intent(in) inst`, `integer(i4b)`,`dimension(:),allocatable tot_used`, `type(IXTstatus) status`, `type(IXTmap),intent(in),optional det_map`, `type(IXTmap),intent(in),optional mon_map`)

Definition at line 525 of file `IXMinstrument.f90`.

References IXMmap::IXFget\_ptr\_map(), and NXUmodule::status.

Referenced by IXFpopulate\_instrument().

Here is the call graph for this function:



#### 5.34.1.3 subroutine IXMinstrument::IXFcheck\_instrument (type(IXTinstrument) *inst*, type(IXTstatus) *status*)

Definition at line 97 of file IXMinstrument.f90.

References NXUmodule::status.

Referenced by IXFpopulate\_instrument(), and IXFset\_instrument().

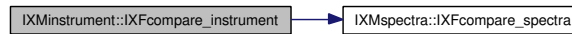
#### 5.34.1.4 logical IXMinstrument::IXFcompare\_instrument (type(IXTinstrument),intent(in) *inst1*, type(IXTinstrument),intent(in) *inst2*)

Definition at line 442 of file IXMinstrument.f90.

References IXMspectra::IXFcompare\_spectra().

Referenced by IXMrunfile::IXFcompare\_runfile().

Here is the call graph for this function:

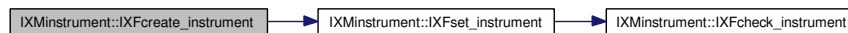


#### 5.34.1.5 subroutine IXMinstrument::IXFcreate\_instrument (type(IXTinstrument) *inst*, character(len=long\_len) *name*, type(IXTsource) *source*, type(IXTmoderator) *moderator*, type(IXTaperture),dimension(:) *apertures*, type(IXTattenuator),dimension(:) *attenuators*, type(IXTspectra) *spectra*, type(IXTstatus) *status*)

Definition at line 183 of file IXMinstrument.f90.

References IXFset\_instrument(), and NXUmodule::status.

Here is the call graph for this function:



#### 5.34.1.6 subroutine IXMinstrument::IXFdestroy\_instrument (type(IXTinstrument) *inst*, type(IXTstatus) *status*)

Definition at line 144 of file IXMinstrument.f90.

References NXUmodule::status.



### 5.34.1.7 subroutine IXMinstrument::IXFei\_info\_instrument (type(IXTinstrument) *inst*, real(dp) *L1*, type(IXTstatus) *status*)

Definition at line 434 of file IXMinstrument.f90.

References IXMmoderator::IXFget\_moderator(), and NXUmodule::status.

Referenced by IXMrunfile::IXFgetei\_runfile(), and IXMrunfile::IXFpeak\_norm\_runfile().

Here is the call graph for this function:



### 5.34.1.8 subroutine IXMinstrument::IXFget\_instrument (type(IXTinstrument),intent(in) *inst*, type(IXTstatus) *status*, integer(i4b),intent(out),optional *inst\_type*, character(len=long\_ len),intent(out),optional *name*, type(IXTsource),intent(out),optional *source*, type(IXTmoderator),intent(out),optional *moderator*, type(IXTaperture),dimension(:),intent(out),optional,allocatable *apertures*, type(IXTattenuator),dimension(:),intent(out),optional,allocatable *attenuators*, type(IXTspectra),intent(out),optional *spectra*, type(IXTdetector),intent(out),optional *detector*, type(IXTinstrument),intent(out),optional *wout*)

Definition at line 342 of file IXMinstrument.f90.

References NXUmodule::status.

### 5.34.1.9 subroutine IXMinstrument::IXFget\_ptr\_instrument (type(IXTinstrument),intent(in),target *inst*, type(IXTchopper\_ instrument),optional,pointer *ci*, type(IXTspectra),optional,pointer *spectra*, type(IXTdetector),optional,pointer *detector*)

Definition at line 403 of file IXMinstrument.f90.

Referenced by IXMrunfile::IXFeffic\_norm\_runfile(), IXMrunfile::IXFgeteival\_runfile(), IXMrunfile::IXFpopulate\_det\_runfile(), IXMrunfile::IXFpopulate\_mon\_runfile(), IXMrunfile::IXFpopulate\_runfile(), and IXMrunfile::IXFremap\_runfile().

### 5.34.1.10 subroutine IXMinstrument::IXFoperation\_run\_instrument (type(IXToperation) *op*, character(len=\*) *field*, type(IXTinstrument) *arg*, type(IXTstatus) *status*)

Definition at line 71 of file IXMinstrument.f90.

References NXUmodule::status.

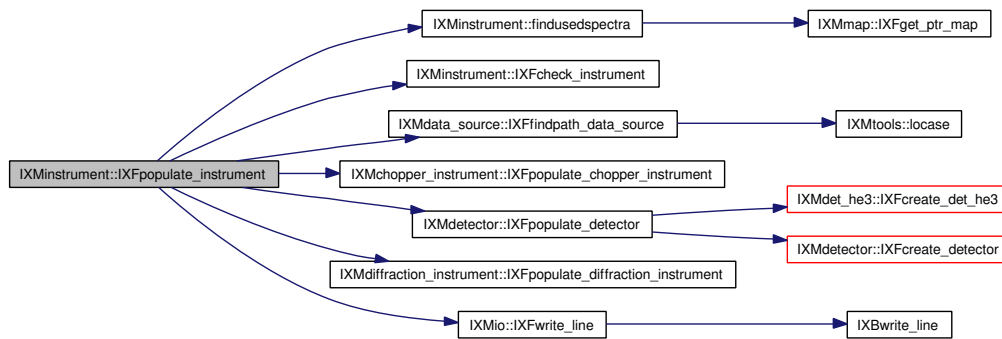
**5.34.1.11** subroutine `IXMinstrument::IXFpopulate_instrument`  
 (type(`IXTinstrument`) *inst*, type(`IXTisis_raw_file`) *inputsource*,  
 type(`IXTdata_source`) *dso*, type(`IXTstatus`) *status*,  
 type(`IXTmap`), optional *det\_map*, type(`IXTmap`), optional *mon\_map*)

Definition at line 459 of file `IXMinstrument.f90`.

References `findusedspectra()`, `IXFcheck_instrument()`, `IXMdata_source::IXFfindpath_data_source()`, `IXMchopper_instrument::IXFpopulate_chopper_instrument()`, `IXMdetector::IXFpopulate_detector()`, `IXMdiffraction_instrument::IXFpopulate_diffraction_instrument()`, `IXMio::IXFwrite_line()`, and `NXUmodule::status`.

Referenced by `IXMrunfile::IXFpopulate_det_runfile()`, `IXMrunfile::IXFpopulate_mon_runfile()`, and `IXMrunfile::IXFpopulate_runfile()`.

Here is the call graph for this function:



**5.34.1.12** subroutine `IXMinstrument::IXFset_instrument` (type(`IXTinstrument`) *inst*, type(`IXTstatus`) *status*, character(len=`long_len`), intent(in), optional *name*, type(`IXTsource`), intent(in), optional *source*, type(`IXTmoderator`), intent(in), optional *moderator*, type(`IXTerture`), dimension(:), intent(in), optional *apertures*, type(`IXTattenuator`), dimension(:), intent(in), optional *attenuators*, type(`IXTspectra`), intent(in), optional *spectra*, type(`IXTdetector`), optional, target *detector*, type(`IXTinstrument`), intent(in), optional *ref*)

Definition at line 248 of file `IXMinstrument.f90`.

References `IXFcheck_instrument()`, and `NXUmodule::status`.

Referenced by `IXFcreate_instrument()`.

Here is the call graph for this function:



**5.34.1.13** subroutine `IXMinstrument::IXFunitsinfo_instrument`  
 (`type(IXTinstrument)` *inst*, `type(IXTstatus)` *status*,  
`integer(i4b),intent(out)` *emode*, `real(dp),intent(out),optional` *L1*,  
`real(dp),intent(out),optional` *efixed*)

Definition at line 418 of file `IXMinstrument.f90`.

References `IXMmoderator::IXFget_moderator()`, and `NXUmodule::status`.

Referenced by `IXMrunfile::IXFeffic_norm_runfile()`, `IXMrunfile::IXFpopulate_det_runfile()`, `IXMrunfile::IXFpopulate_mon_runfile()`, `IXMrunfile::IXFpopulate_runfile()`, `IXMrunfile::units_rebinXdesc_runfile()`, `IXMrunfile::units_rebinXref_runfile()`, and `IXMrunfile::units_runfile()`.

Here is the call graph for this function:



**5.34.1.14** logical `IXMinstrument::IXFwhitecompare_instrument`  
 (`type(IXTinstrument),intent(in)` *sample*, `type(IXTinstrument),intent(in)`  
*whitebeam*)

Definition at line 450 of file `IXMinstrument.f90`.

References `IXMspectra::IXFwhitecompare_spectra()`.

Referenced by `IXMrunfile::IXFwhitecompare_runfile()`.

Here is the call graph for this function:



## 5.35 IXMintegrate Namespace Reference

### Functions

- subroutine `IXFintegrate_1d_hist` (`val`, `err`, `x`, `s`, `e`, `xdist`, `xmin_in`, `xmax_in`, `status`)
- subroutine `IXFintegrate_1d_points` (`val`, `err`, `x`, `s`, `e`, `xmin_in`, `xmax_in`, `status`)
- subroutine `IXFintegrate_2d_hist` (`s`, `e`, `status`, `x`, `xdist`, `xhist`, `xmin_in`, `xmax_in`, `val_pt`, `err_pt`, `ymin_in`, `ymax_in`, `y`, `ydist`, `yhist`, `val_ar_in`, `err_ar_in`, `x_ar`, `spec_lo`, `spec_hi`)

### 5.35.1 Function Documentation

**5.35.1.1** subroutine `IXMintegrate::IXFintegrate_1d_hist` (`real(dp)`,`intent(out)` *val*, `real(dp)`,`intent(out)` *err*, `real(dp)`,`dimension(:)`,`intent(in)` *x*, `real(dp)`,`dimension(:)`,`intent(in)` *s*, `real(dp)`,`dimension(:)`,`intent(in)` *e*, `logical`,`intent(in)` *xdist*, `real(dp)`,`intent(in)`,`optional` *xmin\_in*, `real(dp)`,`intent(in)`,`optional` *xmax\_in*, `type(IXTstatus)`,`intent(inout)` *status*)

Definition at line 7 of file `IXMintegrate.f90`.

References `IXMstatus::IXCseverity_error`, `IXMstatus::IXCseverity_warning`, and `NXUmodule::status`.

Referenced by `IXMdataset_2d::integrate_x_arr_dataset_2d()`, `IXFintegrate_2d_hist()`, and `IXMdataset_1d::IXFintegrate_dataset_1d()`.

**5.35.1.2** subroutine `IXMintegrate::IXFintegrate_1d_points` (`real(dp)`,`intent(out)` *val*, `real(dp)`,`intent(out)` *err*, `real(dp)`,`dimension(:)`,`intent(in)` *x*, `real(dp)`,`dimension(:)`,`intent(in)` *s*, `real(dp)`,`dimension(:)`,`intent(in)` *e*, `real(dp)`,`intent(in)`,`optional` *xmin\_in*, `real(dp)`,`intent(in)`,`optional` *xmax\_in*, `type(IXTstatus)`,`intent(inout)` *status*)

Definition at line 178 of file `IXMintegrate.f90`.

References `IXMstatus::IXCseverity_error`, `IXMstatus::IXCseverity_warning`, and `NXUmodule::status`.

Referenced by `IXMmoments_utils::get_moments()`, `IXMdataset_2d::integrate_x_arr_dataset_2d()`, `IXFintegrate_2d_hist()`, and `IXMdataset_1d::IXFintegrate_dataset_1d()`.

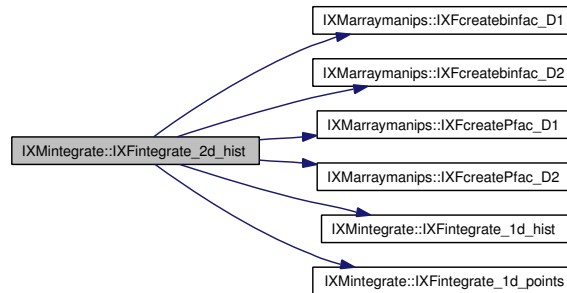
**5.35.1.3** subroutine `IXMintegrate::IXFintegrate_2d_hist`  
`(real(dp),dimension(:,:),intent(in) s, real(dp),dimension(:,:),`  
`,intent(in) e, type(IXTstatus),intent(inout) status,`  
`real(dp),dimension(:),intent(in) x, logical,intent(in),optional xdist,`  
`logical,intent(in),optional xhist, real(dp),intent(in),optional xmin_in,`  
`real(dp),intent(in),optional xmax_in, real(dp),intent(out),optional`  
`val_pt, real(dp),intent(out),optional err_pt, real(dp),intent(in),optional`  
`ymin_in, real(dp),intent(in),optional ymax_in, real(dp),dimension(:)`  
`,intent(in) y, logical,intent(in),optional ydist, logical,intent(in),optional`  
`yhist, real(dp),dimension(:),intent(inout),optional,target`  
`val_ar_in, real(dp),dimension(:),intent(inout),optional,target`  
`err_ar_in, real(dp),dimension(:),intent(out),optional x_ar,`  
`integer(i4b),intent(in),optional spec_lo, integer(i4b),intent(in),optional`  
`spec_hi)`

Definition at line 413 of file `IXMintegrate.f90`.

References `IXMstatus::IXCseverity_error`, `IXMstatus::IXCseverity_warning`,  
`IXMarraymanips::IXFcreatebinfac_D1()`, `IXMarraymanips::IXFcreatebinfac_D2()`,  
`IXMarraymanips::IXFcreatePfac_D1()`, `IXMarraymanips::IXFcreatePfac_D2()`, `IXFintegrate_1d_hist()`,  
`IXFintegrate_1d_points()`, and `NXUmodule::status`.

Referenced by `IXMdataset_2d::integrate_x_dataset_2d()`, `IXMdataset_2d::IXFintegrate_xy_dataset_2d()`,  
`IXMdataset_2d::IXFintegrate_y_dataset_2d()`, and `IXMdataset_2d::IXFintXsumY_dataset_2d()`.

Here is the call graph for this function:



## 5.36 IXMio Namespace Reference

### Functions

- subroutine `IXFwrite_line` (`line`, `status`)
- subroutine `IXFwrite_line_indent` (`line`, `indent`, `ch`, `status`)

### 5.36.1 Function Documentation

#### 5.36.1.1 subroutine `IXMio::IXFwrite_line` (`character(len=*) line`, `type(IXTstatus) status`)

Definition at line 13 of file `IXMio.f90`.

References `IXBwrite_line()`, and `NXUmodule::status`.

Referenced by `IXMtools::homer_message()`, `IXBcreateBindingFieldIfNeeded()`, `IXBcreateBindingPLHS()`, `IXBcreateClassArray()`, `IXBgetFieldFromBinding()`, `IXBgetNumberOfElements()`, `IXBsendFieldToBinding()`, `IXMrunfile::IXFcompare_runfile()`, `IXMhistory::IXFfile_read_history()`, `IXMhistory::IXFfile_write_history()`, `IXMmaths_geometry::IXFpolygon_moments()`, `IXMinstrument::IXFpopulate_instrument()`, `IXMoptions::IXFpresent()`, `IXMgroups::IXFprint_groups()`, `IXMrunfile::IXFremap_runfile()`, `IXMrunfile::IXFsolid_runfile()`, `IXFwrite_line_indent()`, `IXIwrite_line()`, `IXMrunfile::loaddetmap()`, `IXMrunfile::loadmask()`, `IXMrunfile::loadmonmap()`, and `IXMtools::remark()`.

Here is the call graph for this function:



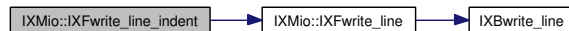
#### 5.36.1.2 subroutine `IXMio::IXFwrite_line_indent` (`character(len=*) line`, `integer indent`, `character(len=*) ch`, `type(IXTstatus) status`)

Definition at line 33 of file `IXMio.f90`.

References `IXFwrite_line()`, and `NXUmodule::status`.

Referenced by `IXMtools::homer_message()`, `IXMoperation::IXFoperationStart()`, `IXMoperation::runOperationCharacter()`, `IXMoperation::runOperationInteger()`, `IXMoperation::runOperationLogical()`, and `IXMoperation::runOperationReal()`.

Here is the call graph for this function:



## 5.37 IXMisis\_raw\_file Namespace Reference

### Classes

- interface IXFget\_raw
- interface IXFsize\_raw
- struct IXTisis\_raw\_file

### Functions

- subroutine IXFdestroy\_isis\_raw\_file (arg, status)
- subroutine IXFcheck\_ISIS\_Raw\_File (arg, status)
- subroutine IXFcreate\_ISIS\_Raw\_File (arg, status)
- subroutine IXFset\_ISIS\_Raw\_File (arg, status, ref)
- subroutine IXFget\_ISIS\_Raw\_File (arg, status, runid, found, ntc1, nsp1, ndet, nper, nmon, nuse)
- subroutine IXFoperation\_run\_ISIS\_Raw\_File (op, field, arg, status)
- subroutine IXFopen\_raw (file\_name, handle, status)
- subroutine IXFopen\_raw\_handle (handle, status)
- subroutine IXFsize\_raw\_i\_array (handle, item\_name, item\_size, status)
- subroutine IXFsize\_raw\_i (handle, item\_name, item\_size, status)
- subroutine IXFget\_spectrum\_d2 (handle, ispec, d2, period, status)
- subroutine IXFget\_spectrum\_array\_d2 (handle, ispec, d2, periods, status)
- subroutine IXFget\_spectrum\_array\_d1 (handle, ispec, d1, period, status)
- subroutine IXFget\_spectrum\_d1 (handle, ispec, d1, period, status)
- subroutine IXFget\_dp (handle, name, value, status)
- subroutine IXFget\_dp1 (handle, name, value, status)
- subroutine IXFget\_dp2 (handle, name, value, status)
- subroutine IXFget\_char (handle, name, value, status)
- subroutine IXFget\_real (handle, name, value, status)
- subroutine IXFget\_real1 (handle, name, value, status)
- subroutine IXFget\_real2 (handle, name, value, status)
- subroutine IXFget\_int (handle, name, value, status)
- subroutine IXFget\_int1 (handle, name, value, status)
- subroutine IXFget\_int2 (handle, name, value, status)
- subroutine IXFget\_data\_i1 (handle, spec\_no, value, status)
- subroutine IXFget\_data\_i2 (handle, spec\_no, value, status)

### Variables

- type(IXTstatus), pointer global\_raw\_status = > NULL()

#### 5.37.1 Function Documentation

- 5.37.1.1 subroutine IXMisis\_raw\_file::IXFcheck\_ISIS\_Raw\_File  
(type(IXTisis\_raw\_file) *arg*, type(IXTstatus) *status*)

Definition at line 62 of file IXMisis\_raw\_file.f90.

**5.37.1.2** subroutine `IXMisis_raw_file::IXFcreate_ISIS_Raw_File`  
 (type(`IXTisis_raw_file`) *arg*, type(`IXTstatus`) *status*)

Definition at line 68 of file `IXMisis_raw_file.f90`.

**5.37.1.3** subroutine `IXMisis_raw_file::IXFdestroy_isis_raw_file`  
 (type(`IXTisis_raw_file`) *arg*, type(`IXTstatus`) *status*)

Definition at line 56 of file `IXMisis_raw_file.f90`.

**5.37.1.4** subroutine `IXMisis_raw_file::IXFget_char` (type(`IXTisis_raw_file`) *handle*, character(len=\*) *name*, character(len=\*) *value*, type(`IXTstatus`) *status*)

Definition at line 444 of file `IXMisis_raw_file.f90`.

References `global_raw_status`, `IXMstatus::IXCseverity_error`, `IXFopen_raw_handle()`, and `NX-Umodule::status`.

Referenced by `IXFget_spectrum_d1()`, and `IXFget_spectrum_d2()`.

Here is the call graph for this function:



**5.37.1.5** subroutine `IXMisis_raw_file::IXFget_data_i1` (type(`IXTisis_raw_file`) *handle*, integer *spec\_no*, integer, dimension(:) *value*, type(`IXTstatus`) *status*)

Definition at line 546 of file `IXMisis_raw_file.f90`.

References `global_raw_status`, `IXMstatus::IXCseverity_error`, `IXFopen_raw_handle()`, and `NX-Umodule::status`.

Referenced by `IXFget_spectrum_d1()`, and `IXFget_spectrum_d2()`.

Here is the call graph for this function:



**5.37.1.6** subroutine `IXMisis_raw_file::IXFget_data_i2` (type(`IXTisis_raw_file`) *handle*, integer, dimension(:) *spec\_no*, integer, dimension(:, :) *value*, type(`IXTstatus`) *status*)

Definition at line 560 of file `IXMisis_raw_file.f90`.

References `global_raw_status`, `IXMstatus::IXCseverity_error`, `IXFopen_raw_handle()`, and `NX-Umodule::status`.

Here is the call graph for this function:



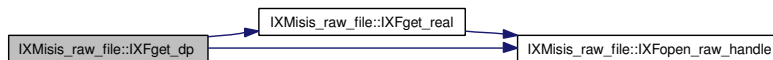


**5.37.1.7** subroutine `IXMisis_raw_file::IXFget_dp` (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*, `real(dp)`, `intent(out)` *value*, `type(IXTstatus)`, `target` *status*)

Definition at line 395 of file `IXMisis_raw_file.f90`.

References `IXMstatus::IXCseverity_error`, `IXMtype_definitions::IXCundef_dp`, `IXMtype_definitions::IXCundef_sp`, `IXFget_real()`, `IXFopen_raw_handle()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.37.1.8** subroutine `IXMisis_raw_file::IXFget_dp1` (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*, `real(dp)`, `dimension(:)`, `intent(out)` *value*, `type(IXTstatus)`, `target` *status*)

Definition at line 410 of file `IXMisis_raw_file.f90`.

References `IXMstatus::IXCseverity_error`, `IXMtype_definitions::IXCundef_dp`, `IXMtype_definitions::IXCundef_sp`, `IXFget_real1()`, `IXFopen_raw_handle()`, and `NXUmodule::status`.

Here is the call graph for this function:

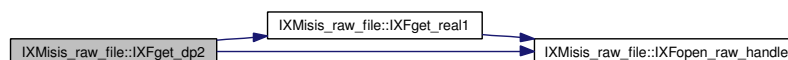


**5.37.1.9** subroutine `IXMisis_raw_file::IXFget_dp2` (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*, `real(dp)`, `dimension(:,:)`, `intent(out)` *value*, `type(IXTstatus)`, `target` *status*)

Definition at line 427 of file `IXMisis_raw_file.f90`.

References `IXMstatus::IXCseverity_error`, `IXMtype_definitions::IXCundef_dp`, `IXMtype_definitions::IXCundef_sp`, `IXFget_real1()`, `IXFopen_raw_handle()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.37.1.10** subroutine `IXMisis_raw_file::IXFget_int` (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*, `integer` *value*, `type(IXTstatus)`, `target` *status*)

Definition at line 504 of file `IXMisis_raw_file.f90`.

References `global_raw_status`, `IXMstatus::IXCseverity_error`, `IXFopen_raw_handle()`, and `NX-Umodule::status`.

Here is the call graph for this function:



**5.37.1.11** subroutine `IXMisis_raw_file::IXFget_int1` (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*, `integer,dimension(:)` *value*, `type(IXTstatus)`, `target` *status*)

Definition at line 518 of file `IXMisis_raw_file.f90`.

References `global_raw_status`, `IXMstatus::IXCseverity_error`, `IXFopen_raw_handle()`, and `NX-Umodule::status`.

Here is the call graph for this function:



**5.37.1.12** subroutine `IXMisis_raw_file::IXFget_int2` (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*, `integer,dimension(:,:)` *value*, `type(IXTstatus)`, `target` *status*)

Definition at line 532 of file `IXMisis_raw_file.f90`.

References `global_raw_status`, `IXMstatus::IXCseverity_error`, `IXFopen_raw_handle()`, and `NX-Umodule::status`.

Here is the call graph for this function:



**5.37.1.13** subroutine `IXMisis_raw_file::IXFget_ISIS_Raw_File` (`type(IXTisis_raw_file)`, `intent(in)` *arg*, `type(IXTstatus)` *status*, `character(len=*)`, `intent(out)`, `optional` *runid*, `logical`, `intent(out)`, `optional` *found*, `integer(i4b)`, `intent(out)`, `optional` *ntc1*, `integer(i4b)`, `intent(out)`, `optional` *nsp1*, `integer(i4b)`, `intent(out)`, `optional` *ndet*, `integer(i4b)`, `intent(out)`, `optional` *nper*, `integer(i4b)`, `intent(out)`, `optional` *nmon*, `integer(i4b)`, `intent(out)`, `optional` *nuse*)

Definition at line 84 of file `IXMisis_raw_file.f90`.

**5.37.1.14** subroutine `IXMisis_raw_file::IXFget_real` (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*, `real*4,intent(out)` *value*, `type(IXTstatus),target` *status*)

Definition at line 459 of file `IXMisis_raw_file.f90`.

References `global_raw_status`, `IXMstatus::IXCseverity_error`, `IXMtype_`-  
 definitions::`IXCundef_sp`, `IXFopen_raw_handle()`, and `NXUmodule::status`.

Referenced by `IXFget_dp()`.

Here is the call graph for this function:



**5.37.1.15** subroutine `IXMisis_raw_file::IXFget_real1` (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*, `real*4,dimension(:)`,`intent(out)` *value*, `type(IXTstatus),target` *status*)

Definition at line 474 of file `IXMisis_raw_file.f90`.

References `global_raw_status`, `IXMstatus::IXCseverity_error`, `IXMtype_`-  
 definitions::`IXCundef_sp`, `IXFopen_raw_handle()`, and `NXUmodule::status`.

Referenced by `IXFget_dp1()`, `IXFget_dp2()`, `IXFget_spectrum_d1()`, and `IXFget_spectrum_`-  
`d2()`.

Here is the call graph for this function:



**5.37.1.16** subroutine `IXMisis_raw_file::IXFget_real2` (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*, `real*4,dimension(:,:)`,`intent(out)` *value*, `type(IXTstatus),target` *status*)

Definition at line 489 of file `IXMisis_raw_file.f90`.

References `global_raw_status`, `IXMstatus::IXCseverity_error`, `IXMtype_`-  
 definitions::`IXCundef_sp`, `IXFopen_raw_handle()`, and `NXUmodule::status`.

Here is the call graph for this function:



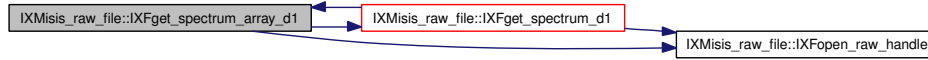
**5.37.1.17** subroutine `IXMisis_raw_file::IXFget_spectrum_array_d1` (`type(IXTisis_raw_file)` *handle*, `integer,dimension(:)` *ispec*, `type(IXTdataset_1d),dimension(:)` *d1*, `integer` *period*, `type(IXTstatus),target` *status*)

Definition at line 311 of file `IXMisis_raw_file.f90`.

References IXMstatus::IXCseverity\_error, IXFget\_spectrum\_d1(), IXFopen\_raw\_handle(), and NXUmodule::status.

Referenced by IXFget\_spectrum\_d1().

Here is the call graph for this function:

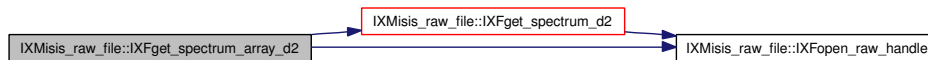


**5.37.1.18** subroutine IXMisis\_raw\_file::IXFget\_spectrum\_array\_d2 (type(IXTisis\_raw\_file),intent(inout) *handle*, integer,dimension(:),intent(in) *ispec*, type(IXTdataset\_2d),dimension(:),intent(out) *d2*, integer,dimension(:),intent(in) *periods*, type(IXTstatus),target *status*)

Definition at line 288 of file IXMisis\_raw\_file.f90.

References IXMstatus::IXCseverity\_error, IXFget\_spectrum\_d2(), IXFopen\_raw\_handle(), and NXUmodule::status.

Here is the call graph for this function:



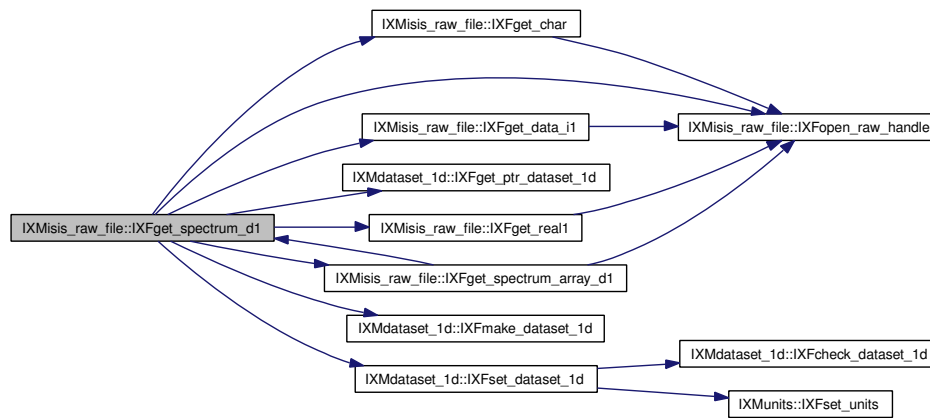
**5.37.1.19** subroutine IXMisis\_raw\_file::IXFget\_spectrum\_d1 (type(IXTisis\_raw\_file),intent(inout) *handle*, integer(i4b) *ispec*, type(IXTdataset\_1d),intent(out) *d1*, integer(i4b),intent(in) *period*, type(IXTstatus),target *status*)

Definition at line 332 of file IXMisis\_raw\_file.f90.

References IXMstatus::IXCseverity\_error, IXFget\_char(), IXFget\_data\_i1(), IXMdataset\_1d::IXFget\_ptr\_dataset\_1d(), IXFget\_real1(), IXFget\_spectrum\_array\_d1(), IXMdataset\_1d::IXFmake\_dataset\_1d(), IXFopen\_raw\_handle(), IXMdataset\_1d::IXFset\_dataset\_1d(), and NXUmodule::status.

Referenced by IXFget\_spectrum\_array\_d1().

Here is the call graph for this function:



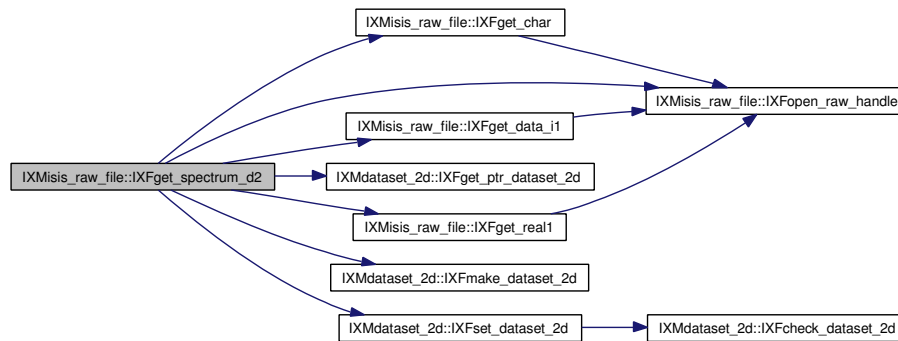
**5.37.1.20** subroutine `IXMisis_raw_file::IXFget_spectrum_d1` (`type(IXTisis_raw_file)`, `intent(inout) handle`, `integer,dimension(:)`, `intent(in) ispec`, `type(IXTdataset_2d)`, `intent(out) d2`, `integer,intent(in) period`, `type(IXTstatus)`, `target status`)

Definition at line 219 of file `IXMisis_raw_file.f90`.

References `IXMstatus::IXCseverity_error`, `IXFget_char()`, `IXFget_data_i1()`, `IXMdataset_2d::IXFget_ptr_dataset_2d()`, `IXFget_real1()`, `IXMdataset_2d::IXFmake_dataset_2d()`, `IXFopen_raw_handle()`, `IXMdataset_2d::IXFset_dataset_2d()`, and `NXUmodule::status`.

Referenced by `IXFget_spectrum_array_d2()`.

Here is the call graph for this function:



**5.37.1.21** subroutine `IXMisis_raw_file::IXFopen_raw` (`character(len=*)`, `intent(in) file_name`, `type(IXTisis_raw_file)`, `intent(out) handle`, `type(IXTstatus)`, `intent(inout) status`)

Definition at line 127 of file `IXMisis_raw_file.f90`.

References `IXFopen_raw_handle()`, and `NXUmodule::status`.

Referenced by `IXMinput_source::size_i()`, and `IXMinput_source::size_i_array()`.

Here is the call graph for this function:



**5.37.1.22** subroutine `IXMisis_raw_file::IXFopen_raw_handle` (type(`IXTisis_raw_file`),intent(out) *handle*, type(`IXTstatus`),intent(inout),target *status*)

Definition at line 136 of file `IXMisis_raw_file.f90`.

References `global_raw_status`, `IXMstatus::IXCseverity_error`, and `NXUmodule::status`.

Referenced by `IXFget_char()`, `IXFget_data_i1()`, `IXFget_data_i2()`, `IXFget_dp()`, `IXFget_dp1()`, `IXFget_dp2()`, `IXFget_int()`, `IXFget_int1()`, `IXFget_int2()`, `IXFget_real()`, `IXFget_real1()`, `IXFget_real2()`, `IXFget_spectrum_array_d1()`, `IXFget_spectrum_array_d2()`, `IXFget_spectrum_d1()`, `IXFget_spectrum_d2()`, `IXFopen_raw()`, `IXFsize_raw_i()`, and `IXFsize_raw_i_array()`.

**5.37.1.23** subroutine `IXMisis_raw_file::IXFoperation_run_ISIS_Raw_File` (type(`IXToperation`) *op*, character(len=\*) *field*, type(`IXTisis_raw_file`) *arg*, type(`IXTstatus`) *status*)

Definition at line 107 of file `IXMisis_raw_file.f90`.

References `NXUmodule::status`.

**5.37.1.24** subroutine `IXMisis_raw_file::IXFset_ISIS_Raw_File` (type(`IXTisis_raw_file`) *arg*, type(`IXTstatus`) *status*, type(`IXTisis_raw_file`) *ref*)

Definition at line 75 of file `IXMisis_raw_file.f90`.

**5.37.1.25** subroutine `IXMisis_raw_file::IXFsize_raw_i` (type(`IXTisis_raw_file`) *handle*, character(len=\*) *item\_name*, integer *item\_size*, type(`IXTstatus`),target *status*)

Definition at line 185 of file `IXMisis_raw_file.f90`.

References `IXMstatus::IXCseverity_error`, `IXFopen_raw_handle()`, and `NXUmodule::status`.

Referenced by `IXFsize_raw_i_array()`.

Here is the call graph for this function:

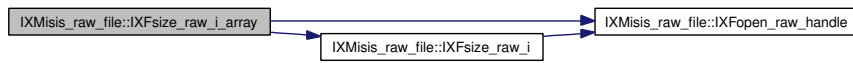


**5.37.1.26** subroutine `IXMisis_raw_file::IXFsize_raw_i_array` (type(`IXTisis_raw_file`) *handle*, character(len=\*) *item\_name*, integer,dimension(:) *item\_size*, type(`IXTstatus`),target *status*)

Definition at line 166 of file `IXMisis_raw_file.f90`.

References IXMstatus::IXCseverity\_error, IXFopen\_raw\_handle(), IXFsize\_raw\_i(), and NXU-module::status.

Here is the call graph for this function:



## 5.37.2 Variable Documentation

### 5.37.2.1 `type(IXTstatus),pointer IXMisis_raw_file::global_raw_status = > NULL()`

Definition at line 42 of file IXMisis\_raw\_file.f90.

Referenced by `FERROR_ADD()`, `IXFget_char()`, `IXFget_data_i1()`, `IXFget_data_i2()`, `IXFget_int()`, `IXFget_int1()`, `IXFget_int2()`, `IXFget_real()`, `IXFget_real1()`, `IXFget_real2()`, and `IXFopen_raw_handle()`.

## 5.38 IXMlattice Namespace Reference

### Classes

- struct **IXTlattice**

### Functions

- subroutine **IXFcheck\_lattice** (*lattice*, *status*)
- subroutine **IXFoperation\_run\_lattice** (*op*, *field*, *arg*, *status*)
- subroutine **IXFset\_lattice** (*lattice*, *status*, *a*, *b*, *c*, *alpha*, *beta*, *gamma*, *space\_group*, *ref*)
- subroutine **IXFget\_lattice** (*lattice*, *status*, *a*, *b*, *c*, *alpha*, *beta*, *gamma*, *space\_group*, *wout*)
- subroutine **IXFdestroy\_lattice** (*lattice*, *status*)
- subroutine **IXFcreate\_lattice** (*lattice*, *a*, *b*, *c*, *alpha*, *beta*, *gamma*, *space\_group*, *status*)

### 5.38.1 Function Documentation

#### 5.38.1.1 subroutine IXMlattice::IXFcheck\_lattice (type(IXTlattice) *lattice*, type(IXTstatus) *status*)

Definition at line 39 of file IXMlattice.f90.

References IXMbase::IXFcheck\_base(), and NXUmodule::status.

Referenced by IXFset\_lattice().

Here is the call graph for this function:



#### 5.38.1.2 subroutine IXMlattice::IXFcreate\_lattice (type(IXTlattice),intent(out) *lattice*, real(dp),intent(in) *a*, real(dp),intent(in) *b*, real(dp),intent(in) *c*, real(dp),intent(in) *alpha*, real(dp),intent(in) *beta*, real(dp),intent(in) *gamma*, character(len=\*),intent(in) *space\_group*, type(IXTstatus) *status*)

Definition at line 163 of file IXMlattice.f90.

References IXFset\_lattice(), and NXUmodule::status.

Here is the call graph for this function:





### 5.38.1.3 subroutine IXMlattice::IXFdestroy\_lattice (type(IXTlattice) *lattice*, type(IXTstatus) *status*)

Definition at line 148 of file IXMlattice.f90.

References NXUmodule::status.

### 5.38.1.4 subroutine IXMlattice::IXFget\_lattice (type(IXTlattice),intent(inout) *lattice*, type(IXTstatus) *status*, real(dp),intent(out),optional *a*, real(dp),intent(out),optional *b*, real(dp),intent(out),optional *c*, real(dp),intent(out),optional *alpha*, real(dp),intent(out),optional *beta*, real(dp),intent(out),optional *gamma*, character(len=\*),intent(out),optional *space\_group*, type(IXTlattice),intent(out),optional *wout*)

Definition at line 123 of file IXMlattice.f90.

References NXUmodule::status.

### 5.38.1.5 subroutine IXMlattice::IXFoperation\_run\_lattice (type(IXToperation) *op*, character(len=\*) *field*, type(IXTlattice) *arg*, type(IXTstatus) *status*)

Definition at line 50 of file IXMlattice.f90.

References NXUmodule::status.

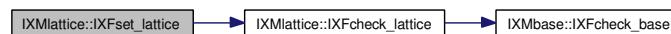
### 5.38.1.6 subroutine IXMlattice::IXFset\_lattice (type(IXTlattice),intent(inout) *lattice*, type(IXTstatus) *status*, real(dp),intent(in),optional *a*, real(dp),intent(in),optional *b*, real(dp),intent(in),optional *c*, real(dp),intent(in),optional *alpha*, real(dp),intent(in),optional *beta*, real(dp),intent(in),optional *gamma*, character(len=\*),intent(in),optional *space\_group*, type(IXTlattice),intent(in),optional *ref*)

Definition at line 78 of file IXMlattice.f90.

References IXFcheck\_lattice(), and NXUmodule::status.

Referenced by IXFcreate\_lattice().

Here is the call graph for this function:



## 5.39 IXMlibcore Namespace Reference

libcore module

### Functions

- integer **IXFlibrary\_init** ()  
*initialise the library*
- subroutine **IXFlibrary\_finish** (status)

### Variables

- integer, parameter **IXCmemory\_stack\_size** = 5000

### 5.39.1 Detailed Description

libcore module

This is the libcore module

### 5.39.2 Function Documentation

#### 5.39.2.1 subroutine IXMlibcore::IXFlibrary\_finish (type(IXTstatus) status)

Definition at line 54 of file IXMlibcore.f90.

References IXMmemory::IXFmemory\_cleanup(), and NXUmodule::status.

Here is the call graph for this function:



#### 5.39.2.2 integer IXMlibcore::IXFlibrary\_init ()

initialise the library

This must be called before using the library as it performs important initialisations for things such as the memory allocator. It returns 0 on success, anything else on error

Definition at line 44 of file IXMlibcore.f90.

References IXCmemory\_stack\_size, and IXMmemory::IXFmemory\_init().

Here is the call graph for this function:



### 5.39.3 Variable Documentation

#### 5.39.3.1 integer,parameter IXMlibcore::IXCmemory\_stack\_size = 5000

Definition at line 35 of file IXMlibcore.f90.

Referenced by IXFlibrary\_init().

## 5.40 IXMmap Namespace Reference

### Classes

- struct `IXTmap`

### Functions

- subroutine `IXFoperation_run_map` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcheck_map` (`arg`, `status`)
- subroutine `IXFcreate_map` (`map`, `work_no`, `total_spec`, `spec_ind`, `spec_no`, `status`)
- subroutine `IXFdestroy_map` (`map`, `status`)
- subroutine `IXFset_map` (`map`, `status`, `work_no`, `total_spec`, `spec_ind`, `spec_no`, `ref`)
- subroutine `IXFget_map` (`map`, `status`, `work_no`, `total_spec`, `spec_ind`, `spec_no`, `wout`)
- subroutine `IXFget_ptr_map` (`map`, `work_no`, `total_spec`, `spec_ind`, `spec_no`)
- subroutine `IXFget_alloc_map` (`map`, `status`, `work_no`, `total_spec`, `spec_ind`, `spec_no`, `wout`)
- subroutine `IXFread_dso_map` (`map`, `dso`, `status`)
- subroutine `IXFfileread_map` (`map`, `fname`, `status`)
- subroutine `IXFread_map` (`fname`, `nspec`, `spec_ind`, `specs`, `wn`, `status`, `wk_spec`)
- subroutine `IXFwkspec_map` (`map`, `wk_spec`)
- subroutine `IXFpopulate_map_dso` (`map`, `dso`, `fpath`, `maptype`, `status`)
- subroutine `IXFrawfile_popmon_map` (`map`, `inputsource`, `status`)
- subroutine `IXFrawfile_popdet_map` (`map`, `inputsource`, `status`)
- subroutine `IXFverify_period_map` (`Vmap`, `period`, `rawfile`, `status`)

### 5.40.1 Function Documentation

#### 5.40.1.1 subroutine `IXMmap::IXFcheck_map` (`type(IXTmap) arg`, `type(IXTstatus) status`)

Definition at line 60 of file `IXMmap.f90`.

References `IXMbase::IXFcheck_base()`, and `NXUmodule::status`.

Referenced by `IXFset_map()`.

Here is the call graph for this function:



#### 5.40.1.2 subroutine `IXMmap::IXFcreate_map` (`type(IXTmap) map`, `integer(i4b),dimension(:),intent(in) work_no`, `integer(i4b),dimension(:),intent(in) total_spec`, `integer(i4b),dimension(:),intent(in) spec_ind`, `integer(i4b),dimension(:),intent(in) spec_no`, `type(IXTstatus) status`)

Definition at line 73 of file `IXMmap.f90`.

References IXFset\_map(), and NXUmodule::status.

Referenced by IXFfileread\_map().

Here is the call graph for this function:



#### 5.40.1.3 subroutine IXMmap::IXFdestroy\_map (type(IXTmap) map, type(IXTstatus) status)

Definition at line 92 of file IXMmap.f90.

References NXUmodule::status.

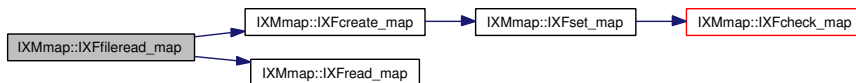
#### 5.40.1.4 subroutine IXMmap::IXFfileread\_map (type(IXTmap) map, character(len=\*) fname, type(IXTstatus) status)

Definition at line 252 of file IXMmap.f90.

References IXFcreate\_map(), IXFread\_map(), and NXUmodule::status.

Referenced by IXFpopulate\_map\_dso(), and IXFread\_dso\_map().

Here is the call graph for this function:



#### 5.40.1.5 subroutine IXMmap::IXFget\_alloc\_map (type(IXTmap), intent(in) map, type(IXTstatus) status, integer(i4b), dimension(:), optional, allocatable work\_no, integer(i4b), dimension(:), optional, allocatable total\_spec, integer(i4b), dimension(:), optional, allocatable spec\_ind, integer(i4b), dimension(:), optional, allocatable spec\_no, type(IXTmap), intent(out), optional wout)

Definition at line 203 of file IXMmap.f90.

References IXFget\_map(), and NXUmodule::status.

Here is the call graph for this function:



**5.40.1.6** subroutine `IXMmap::IXFget_map` (`type(IXTmap)`,`intent(in) map`,  
`type(IXTstatus) status`, `integer(i4b),dimension(:),intent(out),optional`  
`work_no`, `integer(i4b),dimension(:),intent(out),optional`  
`total_spec`, `integer(i4b),dimension(:),intent(out),optional`  
`spec_ind`, `integer(i4b),dimension(:),intent(out),optional spec_no`,  
`type(IXTmap),intent(out),optional wout`)

Definition at line 162 of file `IXMmap.f90`.

References `NXUmodule::status`.

Referenced by `IXFget_alloc_map()`.

**5.40.1.7** subroutine `IXMmap::IXFget_ptr_map` (`type(IXTmap)`  
`map`, `integer(i4b),dimension(:),optional,pointer work_no`,  
`integer(i4b),dimension(:),optional,pointer total_spec`,  
`integer(i4b),dimension(:),optional,pointer spec_ind`,  
`integer(i4b),dimension(:),optional,pointer spec_no`)

Definition at line 186 of file `IXMmap.f90`.

Referenced by `IXMinstrument::finduseddetectors()`, `IXMinstrument::findusedspectra()`, and `IXMbridge::IXFpopulate_bridge()`.

**5.40.1.8** subroutine `IXMmap::IXFoperation_run_map` (`type(IXToperation) op`,  
`character(len=*) field`, `type(IXTmap) arg`, `type(IXTstatus) status`)

Definition at line 38 of file `IXMmap.f90`.

References `NXUmodule::status`.

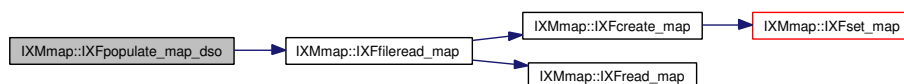
**5.40.1.9** subroutine `IXMmap::IXFpopulate_map_dso` (`type(IXTmap),intent(out)`  
`map`, `type(IXTdata_source),intent(in) dso`, `character(len=long_-`  
`len),intent(in) fpath`, `character(len=*)`,`intent(in) maptype`, `type(IXTstatus)`  
`status`)

Definition at line 404 of file `IXMmap.f90`.

References `IXFfileread_map()`, and `NXUmodule::status`.

Referenced by `IXMrunfile::IXFremap_runfile()`, `IXMrunfile::loaddetmap()`, and `IXMrunfile::loadmonmap()`.

Here is the call graph for this function:



**5.40.1.10** subroutine `IXMmap::IXFrawfile_popdet_map`  
 (type(`IXTmap`),intent(out) *map*, type(`IXTisis_raw_file`),intent(in)  
*inputsource*, type(`IXTstatus`) *status*)

Definition at line 466 of file `IXMmap.f90`.

References `NXUmodule::status`.

Referenced by `IXMrunfile::loaddetmap()`.

**5.40.1.11** subroutine `IXMmap::IXFrawfile_popmon_map`  
 (type(`IXTmap`),intent(out) *map*, type(`IXTisis_raw_file`),intent(in)  
*inputsource*, type(`IXTstatus`) *status*)

Definition at line 429 of file `IXMmap.f90`.

References `NXUmodule::status`.

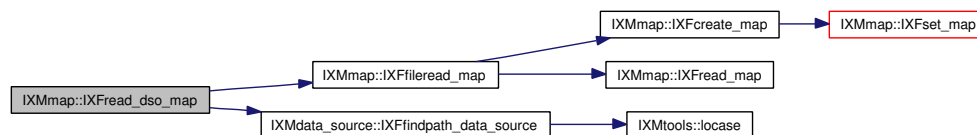
Referenced by `IXMrunfile::loadmonmap()`.

**5.40.1.12** subroutine `IXMmap::IXFread_dso_map` (type(`IXTmap`) *map*,  
 type(`IXTdata_source`) *dso*, type(`IXTstatus`) *status*)

Definition at line 233 of file `IXMmap.f90`.

References `IXMbase::IXCmapfile`, `IXFfileread_map()`, `IXMdata_source::IXFindpath_data_source`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.40.1.13** subroutine `IXMmap::IXFread_map` (character(len=\*)  
*fname*, integer(i4b),dimension(:),allocatable *nspec*,  
 integer(i4b),dimension(:),allocatable *spec\_ind*,  
 integer(i4b),dimension(:),allocatable *specs*, inte-  
 ger(i4b),dimension(:),allocatable *wn*, type(`IXTstatus`) *status*,  
 integer(i4b),dimension(:),optional,allocatable *wk\_spec*)

Definition at line 269 of file `IXMmap.f90`.

References `NXUmodule::status`.

Referenced by `IXFfileread_map()`.

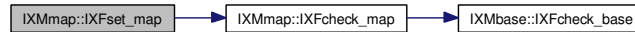
**5.40.1.14** subroutine `IXMmap::IXFset_map` (`type(IXTmap)`, `intent(inout)` *map*, `type(IXTstatus)` *status*, `integer(i4b)`, `dimension(:)`, `intent(in)`, optional *work\_no*, `integer(i4b)`, `dimension(:)`, `intent(in)`, optional *total\_spec*, `integer(i4b)`, `dimension(:)`, `intent(in)`, optional *spec\_ind*, `integer(i4b)`, `dimension(:)`, `intent(in)`, optional *spec\_no*, `type(IXTmap)`, `intent(in)`, optional *ref*)

Definition at line 115 of file `IXMmap.f90`.

References `IXFcheck_map()`, and `NXUmodule::status`.

Referenced by `IXFcreate_map()`.

Here is the call graph for this function:



**5.40.1.15** subroutine `IXMmap::IXFverify_period_map` (`type(IXTmap)`, `intent(in)` *Vmap*, `integer(i4b)`, `intent(in)` *period*, `type(IXTisis_raw_file)`, `intent(in)` *rawfile*, `type(IXTstatus)` *status*)

Definition at line 535 of file `IXMmap.f90`.

References `NXUmodule::status`.

Referenced by `IXMrunfile::IXFpopulate_det_runfile()`, `IXMrunfile::IXFpopulate_mon_runfile()`, and `IXMrunfile::IXFpopulate_runfile()`.

**5.40.1.16** subroutine `IXMmap::IXFwkspec_map` (`type(IXTmap)` *map*, `integer(i4b)`, `dimension(:)`, allocatable *wk\_spec*)

Definition at line 393 of file `IXMmap.f90`.

Referenced by `IXMbridge::IXFpopulate_bridge()`.



## 5.41 IXMmask Namespace Reference

### Classes

- struct `IXTmask`

### Functions

- subroutine `IXFdestroy_mask` (`arg`, `status`)
- subroutine `IXFoperation_run_mask` (`op`, `field`, `arg`, `status`)
- subroutine `IXFget_mask` (`mask`, `status`, `mask_array`, `wout`)
- subroutine `IXFcreate_mask` (`mask`, `mask_array`, `status`)
- subroutine `IXFset_mask` (`mask`, `status`, `mask_array`, `ref`)
- subroutine `IXFcheck_mask` (`w1`, `status`)
- subroutine `IXFget_ptr_mask` (`mask`, `mask_array`)
- subroutine `IXFget_alloc_mask` (`mask`, `status`, `mask_array`, `wout`)
- subroutine `IXFread_dso_mask` (`mask`, `dso`, `status`)
- subroutine `IXFreadgen_dso_mask` (`mask`, `dso`, `gentype`, `status`)
- subroutine `IXFfileread_mask` (`mask`, `fname`, `status`)
- subroutine `IXFread_mask` (`fname`, `mask_array`, `status`)
- subroutine `IXFpopulate_mask_dso` (`mask`, `dso`, `fpath`, `masktype`, `status`)

### 5.41.1 Function Documentation

#### 5.41.1.1 subroutine `IXMmask::IXFcheck_mask` (`type(IXTmask)` `w1`, `type(IXTstatus)` `status`)

Definition at line 143 of file `IXMmask.f90`.

Referenced by `IXFset_mask()`.

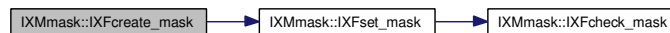
#### 5.41.1.2 subroutine `IXMmask::IXFcreate_mask` (`type(IXTmask)`, `intent(out)` `mask`, `integer(i4b)`, `dimension(:)`, `intent(in)`, `optional mask_array`, `type(IXTstatus)`, `intent(inout)` `status`)

Definition at line 93 of file `IXMmask.f90`.

References `IXFset_mask()`, and `NXUmodule::status`.

Referenced by `IXFfileread_mask()`, and `IXMrunfile::loadmask()`.

Here is the call graph for this function:



#### 5.41.1.3 subroutine `IXMmask::IXFdestroy_mask` (`type(IXTmask)` `arg`, `type(IXTstatus)` `status`)

Definition at line 41 of file `IXMmask.f90`.

References `NXUmodule::status`.

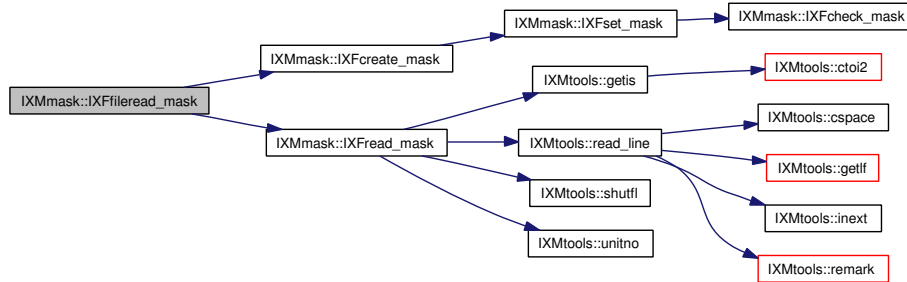
#### 5.41.1.4 subroutine IXMmask::IXFfileread\_mask (type(IXTmask) *mask*, character(len=\*) *fname*, type(IXTstatus) *status*)

Definition at line 247 of file IXMmask.f90.

References IXFcreate\_mask(), IXFread\_mask(), and NXUmodule::status.

Referenced by IXFpopulate\_mask\_dso().

Here is the call graph for this function:

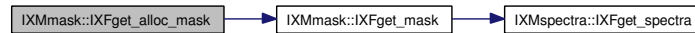


#### 5.41.1.5 subroutine IXMmask::IXFget\_alloc\_mask (type(IXTmask),intent(in) *mask*, type(IXTstatus) *status*, integer(i4b),dimension(:),optional,allocatable *mask\_array*, type(IXTmask),intent(out) *wout*)

Definition at line 169 of file IXMmask.f90.

References IXFget\_mask(), and NXUmodule::status.

Here is the call graph for this function:



#### 5.41.1.6 subroutine IXMmask::IXFget\_mask (type(IXTmask),intent(in) *mask*, type(IXTstatus),intent(inout) *status*, integer(i4b),dimension(:),intent(out),optional *mask\_array*, type(IXTmask),intent(out),optional *wout*)

Definition at line 69 of file IXMmask.f90.

References IXMspectra::IXFget\_spectra(), and NXUmodule::status.

Referenced by IXFget\_alloc\_mask().

Here is the call graph for this function:



### 5.41.1.7 subroutine IXMmask::IXFget\_ptr\_mask (type(IXTmask) *mask*, integer(i4b),dimension(:),optional,pointer *mask\_array*)

Definition at line 155 of file IXMmask.f90.

Referenced by IXMbridge::IXFpopulate\_bridge().

### 5.41.1.8 subroutine IXMmask::IXFoperation\_run\_mask (type(IXToperation) *op*, character(len=\*) *field*, type(IXTmask) *arg*, type(IXTstatus) *status*)

Definition at line 50 of file IXMmask.f90.

References NXUmodule::status.

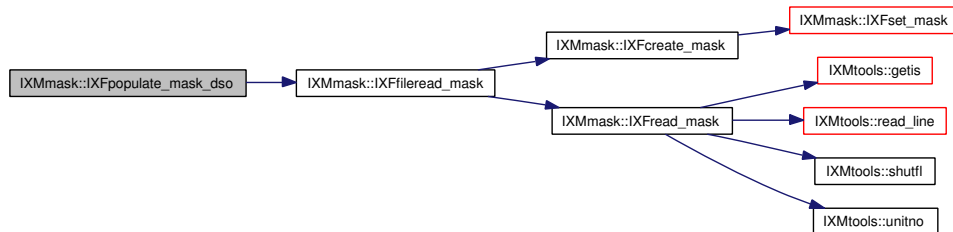
### 5.41.1.9 subroutine IXMmask::IXFpopulate\_mask\_dso (type(IXTmask),intent(out) *mask*, type(IXTdata\_source),intent(in) *dso*, character(len=long\_len),intent(in) *fpath*, character(len=\*) ,intent(in) *masktype*, type(IXTstatus) *status*)

Definition at line 319 of file IXMmask.f90.

References IXFfileread\_mask(), and NXUmodule::status.

Referenced by IXMrunfile::loadmask().

Here is the call graph for this function:

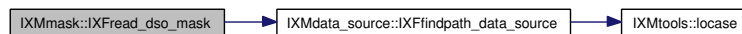


### 5.41.1.10 subroutine IXMmask::IXFread\_dso\_mask (type(IXTmask) *mask*, type(IXTdata\_source) *dso*, type(IXTstatus) *status*)

Definition at line 187 of file IXMmask.f90.

References IXMbase::IXCmaskfile, IXMdata\_source::IXFfindpath\_data\_source(), and NXUmodule::status.

Here is the call graph for this function:



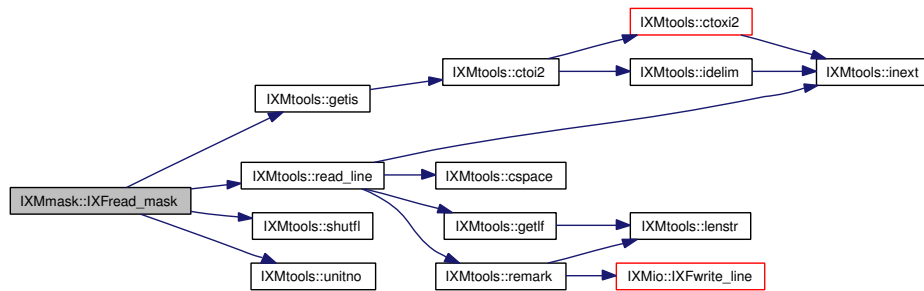
**5.41.1.11** subroutine `IXMmask::IXFread_mask` (`character(len=*) fname`,  
`integer(i4b),dimension(:),allocatable mask_array`, `type(IXTstatus)`  
`status`)

Definition at line 265 of file `IXMmask.f90`.

References `IXMtools::getis()`, `MASK`, `IXMtools::read_line()`, `IXMtools::shutfl()`, `NXUmodule::status`, and `IXMtools::unitno()`.

Referenced by `IXFfile_read_mask()`.

Here is the call graph for this function:

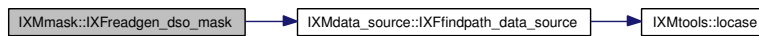


**5.41.1.12** subroutine `IXMmask::IXFreadgen_dso_mask` (`type(IXTmask) mask`,  
`type(IXTdata_source) dso`, `character(len=*) gentype`, `type(IXTstatus)`  
`status`)

Definition at line 219 of file `IXMmask.f90`.

References `IXMdata_source::IXFfindpath_data_source()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.41.1.13** subroutine `IXMmask::IXFset_mask` (`type(IXTmask),intent(inout)`  
`mask`, `type(IXTstatus),intent(inout) status`, `inte-`  
`ger(i4b),dimension(:),intent(in),optional mask_array`,  
`type(IXTmask),intent(in),optional ref`)

Definition at line 109 of file `IXMmask.f90`.

References `IXFcheck_mask()`, and `NXUmodule::status`.

Referenced by `IXFcreate_mask()`.

Here is the call graph for this function:



## 5.42 IXMmaths\_\_basis Namespace Reference

### Classes

- interface **IXFnorm**
- interface **IXFdot**
- interface **IXFcos**
- interface **IXFcross**

### Functions

- **real(dp) IXFnorm (v)**
- **real(dp) IXFdot (v1, v2)**
- **real(dp) IXFcos (v1, v2)**
- **real(dp), dimension(3) IXFcross (v1, v2)**
- **real(dp), dimension(3, 3) IXFrotvec\_to\_rotmat (theta)**
- **real(dp), dimension(3) IXFrotmat\_to\_rotvec (r)**
- **logical IXFrotmat\_orthogonal (r)**

#### 5.42.1 Function Documentation

**5.42.1.1** **real(dp) IXMmaths\_\_basis::IXFcos (real(dp),dimension(3),intent(in) v1, real(dp),dimension(3),intent(in) v2)**

Definition at line 89 of file IXMmaths\_\_basis.f90.

**5.42.1.2** **real(dp),dimension(3) IXMmaths\_\_basis::IXFcross (real(dp),dimension(3),intent(in) v1, real(dp),dimension(3),intent(in) v2)**

Definition at line 109 of file IXMmaths\_\_basis.f90.

**5.42.1.3** **real(dp) IXMmaths\_\_basis::IXFdot (real(dp),dimension(3),intent(in) v1, real(dp),dimension(3),intent(in) v2)**

Definition at line 66 of file IXMmaths\_\_basis.f90.

**5.42.1.4** **real(dp) IXMmaths\_\_basis::IXFnorm (real(dp),dimension(3),intent(in) v)**

Definition at line 39 of file IXMmaths\_\_basis.f90.

**5.42.1.5** **logical IXMmaths\_\_basis::IXFrotmat\_orthogonal (real(dp),dimension(3,3),intent(in) r)**

Definition at line 267 of file IXMmaths\_\_basis.f90.

References IXMmaths\_\_utils::IXFunit\_matrix().

Referenced by IXMorientation::IXFcheck\_orientation().

Here is the call graph for this function:



#### 5.42.1.6 `real(dp),dimension(3) IXMmaths_basis::IXFrotmat_to_rotvec` `(real(dp),dimension(3,3),intent(in) r)`

Definition at line 194 of file IXMmaths\_basis.f90.

Referenced by IXMorientation::IXFget\_orientation(), and IXMorientation::IXFget\_rotvec\_orientation().

#### 5.42.1.7 `real(dp),dimension(3,3) IXMmaths_basis::IXFrotvec_to_rotmat` `(real(dp),dimension(3),intent(in) theta)`

Definition at line 145 of file IXMmaths\_basis.f90.

References IXMmaths\_utils::IXFunit\_matrix().

Referenced by IXMorientation::IXFset\_orientation(), and IXMorientation::IXFset\_rotvec\_orientation().

Here is the call graph for this function:



## 5.43 IXMmaths\_geometry Namespace Reference

### Functions

- subroutine `IXFpolygon_moments` (`x`, `y`, `status`, `area`, `centroid`)

#### 5.43.1 Function Documentation

**5.43.1.1** subroutine `IXMmaths_geometry::IXFpolygon_moments`  
(`real(dp),dimension(:),intent(in) x`, `real(dp),dimension(:) ,intent(in) y`, `type(IXTstatus) status`, `real(dp),intent(out),optional area`,  
`real(dp),dimension(2),intent(out),optional centroid`)

Definition at line 33 of file `IXMmaths_geometry.f90`.

References `IXMstatus::IXCseverity_error`, `IXMio::IXFwrite_line()`, and `NXUmodule::status`.

Referenced by `IXMshape::IXFsolid_angle_polygon()`, and `IXMshape::IXFvolume_polygon()`.

Here is the call graph for this function:



## 5.44 IXMmaths\_projection Namespace Reference

### Functions

- subroutine **IXFproj\_projection** (*vertices*, *projection*, *px*, *py*, *status*, *radius*, *axes*)

### Variables

- integer(i4b), parameter **IXCspherical\_polar** = 1
- integer(i4b), parameter **IXCcyindrical\_polar** = 2
- integer(i4b), parameter **IXCpolar** = 3
- integer(i4b), parameter **IXCplanar** = 4

#### 5.44.1 Function Documentation

**5.44.1.1** subroutine **IXMmaths\_projection::IXFproj\_projection**  
 (real(dp),dimension(:,:),intent(in) *vertices*, integer(i4b),intent(in)  
*projection*, real(dp),dimension(size(vertices),2),intent(out) *px*,  
 real(dp),dimension(size(vertices),2),intent(out) *py*, type(IXTstatus)  
*status*, real(dp),intent(in),optional *radius*, integer(i4b),dimension(2)  
 ,intent(in),optional *axes*)

Definition at line 27 of file IXMmaths\_projection.f90.

References `IXCcyindrical_polar`, `IXCplanar`, `IXCpolar`, `IXMstatus::IXCseverity_error`, `IXCspherical_polar`, and `NXUmodule::status`.

Referenced by `IXMshape::IXFprojarea_vertices_shape()`.

#### 5.44.2 Variable Documentation

**5.44.2.1** integer(i4b),parameter **IXMmaths\_projection::IXCcyindrical\_polar** = 2

Definition at line 18 of file IXMmaths\_projection.f90.

Referenced by `IXFproj_projection()`.

**5.44.2.2** integer(i4b),parameter **IXMmaths\_projection::IXCplanar** = 4

Definition at line 20 of file IXMmaths\_projection.f90.

Referenced by `IXFproj_projection()`.

**5.44.2.3** integer(i4b),parameter **IXMmaths\_projection::IXCpolar** = 3

Definition at line 19 of file IXMmaths\_projection.f90.

Referenced by `IXFproj_projection()`.



**5.44.2.4 integer(i4b),parameter IXMmaths\_projection::IXCspherical\_polar = 1**

Definition at line 17 of file IXMmaths\_projection.f90.

Referenced by IXFproj\_projection().

## 5.45 IXMmaths\_utils Namespace Reference

### Functions

- subroutine `IXFunit_matrix` (`mat`)

#### 5.45.1 Function Documentation

##### 5.45.1.1 subroutine `IXMmaths_utils::IXFunit_matrix` (`real(dp),dimension(:,:),intent(out) mat`)

Definition at line 21 of file `IXMmaths_utils.f90`.

Referenced by `IXMorientation::IXFcreate_orientation()`, `IXMmaths_basis::IXFrotmat_orthogonal()`, and `IXMmaths_basis::IXFrotvec_to_rotmat()`.

## 5.46 IXMmemory Namespace Reference

### Classes

- struct **IXTmemory\_info**

### Functions

- subroutine **IXFmemory\_init** (*size*)
- subroutine **IXFmemory\_cleanup** (*status*)
- subroutine **associate\_integer4** (*ptr*, *value*)
- subroutine **associate\_real8** (*ptr*, *value*)

### Variables

- integer, parameter **IXCmemory\_buckets** = **9973**
- integer(*cpointer\_t*), external **IXBexternalMakeResult**
- integer(*cpointer\_t*), external **IXBallocArrayDescriptor**
- integer(*cpointer\_t*), external **IXBgetArraydata**

#### 5.46.1 Function Documentation

##### 5.46.1.1 subroutine IXMmemory::associate\_integer4 (integer(*cpointer\_t*),*intent(in) ptr*, integer(*i4b*),*intent(out) value*)

Definition at line 198 of file IXMmemory.f90.

References `c_associate_integer4`.

##### 5.46.1.2 subroutine IXMmemory::associate\_real8 (integer(*cpointer\_t*),*intent(in) ptr*, real(*dp*),*intent(out) value*)

Definition at line 208 of file IXMmemory.f90.

References `c_associate_real8`.

##### 5.46.1.3 subroutine IXMmemory::IXFmemory\_cleanup (type(*IXTstatus*) *status*)

Definition at line 183 of file IXMmemory.f90.

References `NXUmodule::status`.

Referenced by `IXMlibcore::IXFlibrary_finish()`.

##### 5.46.1.4 subroutine IXMmemory::IXFmemory\_init (integer *size*)

Definition at line 177 of file IXMmemory.f90.

Referenced by `IXMlibcore::IXFlibrary_init()`.

## 5.46.2 Variable Documentation

### 5.46.2.1 `integer(cpointer_t),external IXMmemory::IXBallocArrayDescriptor`

Definition at line 27 of file IXMmemory.f90.

### 5.46.2.2 `integer(cpointer_t),external IXMmemory::IXBexternalMakeResult`

Definition at line 27 of file IXMmemory.f90.

### 5.46.2.3 `integer(cpointer_t),external IXMmemory::IXBgetArraydata`

Definition at line 27 of file IXMmemory.f90.

### 5.46.2.4 `integer,parameter IXMmemory::IXCmemory_buckets = 9973`

Definition at line 24 of file IXMmemory.f90.

## 5.47 IXMmoderator Namespace Reference

### Classes

- struct `IXTmoderator`

### Functions

- subroutine `IXFdestroy_moderator` (`arg`, `status`)
- subroutine `IXFoperation_run_moderator` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcreate_moderator` (`moderator`, `name`, `distance`, `width`, `height`, `thickness`, `angle`, `temperature`, `pulse_model`, `pulse_pars`, `status`)
- subroutine `IXFset_moderator` (`moderator`, `status`, `name`, `distance`, `width`, `height`, `thickness`, `angle`, `temperature`, `pulse_model`, `pulse_pars`, `ref`)
- subroutine `IXFget_moderator` (`moderator`, `status`, `name`, `distance`, `width`, `height`, `thickness`, `angle`, `temperature`, `&pulse_model`, `pulse_pars`, `wout`)
- subroutine `IXFget_ptr_moderator` (`moderator`, `pars_ptr`)
- subroutine `IXFget_alloc_moderator` (`moderator`, `status`, `name`, `distance`, `width`, `height`, `thickness`, `angle`, `temperature`, `&pulse_model`, `pulse_pars`, `wout`)
- subroutine `IXFcheck_moderator` (`moderator`, `status`)

### 5.47.1 Function Documentation

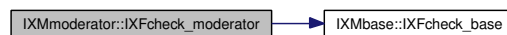
#### 5.47.1.1 subroutine `IXMmoderator::IXFcheck_moderator` (`type(IXTmoderator) moderator`, `type(IXTstatus) status`)

Definition at line 256 of file `IXMmoderator.f90`.

References `IXMbase::IXFcheck_base()`, and `NXUmodule::status`.

Referenced by `IXFset_moderator()`.

Here is the call graph for this function:

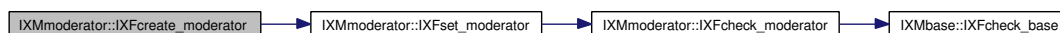


#### 5.47.1.2 subroutine `IXMmoderator::IXFcreate_moderator` (`type(IXTmoderator)`, `intent(out) moderator`, `character(len=*)`, `intent(in) name`, `real(dp)`, `intent(in) distance`, `real(dp)`, `intent(in) width`, `real(dp)`, `intent(in) height`, `real(dp)`, `intent(in) thickness`, `real(dp)`, `intent(in) angle`, `real(dp)`, `intent(in) temperature`, `character(len=*)`, `intent(in) pulse_model`, `real(dp)`, `dimension(:)`, `intent(in) pulse_pars`, `type(IXTstatus)`, `intent(inout) status`)

Definition at line 95 of file `IXMmoderator.f90`.

References `IXFset_moderator()`, and `NXUmodule::status`.

Here is the call graph for this function:



### 5.47.1.3 subroutine IXMmoderator::IXFdestroy\_moderator (type(IXTmoderator) *arg*, type(IXTstatus) *status*)

Definition at line 49 of file IXMmoderator.f90.

References NXUmodule::status.

### 5.47.1.4 subroutine IXMmoderator::IXFget\_alloc\_moderator (type(IXTmoderator),intent(in) *moderator*, type(IXTstatus),intent(inout) *status*, character(len=\*),intent(out),optional *name*, real(dp),intent(out),optional *distance*, real(dp),intent(out),optional *width*, real(dp),intent(out),optional *height*, real(dp),intent(out),optional *thickness*, real(dp),intent(out),optional *angle*, real(dp),intent(out),optional *temperature*, &,intent(out),optional *pulse\_model*, real(dp),dimension(:),allocatable *pulse\_pars*, type(IXTmoderator),intent(out),optional *wout*)

Definition at line 229 of file IXMmoderator.f90.

References IXFget\_moderator(), and NXUmodule::status.

Here is the call graph for this function:



### 5.47.1.5 subroutine IXMmoderator::IXFget\_moderator (type(IXTmoderator),intent(in) *moderator*, type(IXTstatus),intent(inout) *status*, character(len=\*),intent(out),optional *name*, real(dp),intent(out),optional *distance*, real(dp),intent(out),optional *width*, real(dp),intent(out),optional *height*, real(dp),intent(out),optional *thickness*, real(dp),intent(out),optional *angle*, real(dp),intent(out),optional *temperature*, &,intent(out),optional *pulse\_model*, real(dp),dimension(:),intent(out),optional *pulse\_pars*, type(IXTmoderator),intent(out),optional *wout*)

Definition at line 180 of file IXMmoderator.f90.

References NXUmodule::status.

Referenced by IXMinstrument::IXFei\_info\_instrument(), IXFget\_alloc\_moderator(), and IXMinstrument::IXFunitsinfo\_instrument().

### 5.47.1.6 subroutine IXMmoderator::IXFget\_ptr\_moderator (type(IXTmoderator),intent(in) *moderator*, real(dp),dimension(:),optional,pointer *pars\_ptr*)

Definition at line 216 of file IXMmoderator.f90.

### 5.47.1.7 subroutine IXMmoderator::IXFoperation\_run\_moderator (type(IXToperation) *op*, character(len=\*) *field*, type(IXTmoderator) *arg*, type(IXTstatus) *status*)

Definition at line 67 of file IXMmoderator.f90.

References NXUmodule::status.

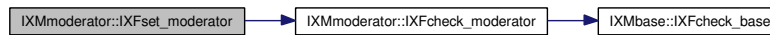
**5.47.1.8 subroutine IXMmoderator::IXFset\_moderator**  
(type(IXTmoderator),intent(inout) *moderator*,  
type(IXTstatus),intent(inout) *status*, character(len=\*),intent(in),optional  
*name*, real(dp),intent(in),optional *distance*, real(dp),intent(in),optional  
*width*, real(dp),intent(in),optional *height*, real(dp),intent(in),optional  
*thickness*, real(dp),intent(in),optional *angle*, real(dp),intent(in),optional  
*temperature*, character(len=\*),intent(in),optional *pulse\_model*,  
real(dp),dimension(:) ,intent(in),optional *pulse\_pars*,  
type(IXTmoderator),intent(in),optional *ref*)

Definition at line 124 of file IXMmoderator.f90.

References IXFcheck\_moderator(), and NXUmodule::status.

Referenced by IXFcreate\_moderator().

Here is the call graph for this function:



## 5.48 IXMmoments Namespace Reference

### Classes

- struct `IXTmoments`

### Functions

- subroutine `IXFdestroy_moments` (`arg`, `status`)
- subroutine `IXFcheck_moments` (`arg`, `status`)
- subroutine `IXFoperation_run_moments` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcreate_moments` (`arg`, `area`, `bkgd_xmean`, `bkgd_slope`, `xmax`, `c_fwhh`, `fwhh`, `xmean`, `sigma`, `g1`, `g2`, `status`)
- subroutine `IXFset_moments` (`var`, `status`, `area`, `bkgd_xmean`, `bkgd_slope`, `xmax`, `c_fwhh`, `fwhh`, `xmean`, `sigma`, `g1`, `g2`, `ref`)
- subroutine `IXFget_moments` (`var`, `status`, `area`, `bkgd_xmean`, `bkgd_slope`, `xmax`, `c_fwhh`, `fwhh`, `xmean`, `sigma`, `g1`, `g2`, `wout`)

### 5.48.1 Function Documentation

**5.48.1.1** subroutine `IXMmoments::IXFcheck_moments` (`type(IXTmoments)` *arg*, `type(IXTstatus)` *status*)

Definition at line 79 of file `IXMmoments.f90`.

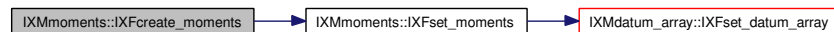
References `NXUmodule::status`.

**5.48.1.2** subroutine `IXMmoments::IXFcreate_moments` (`type(IXTmoments)` *arg*, `type(IXTdatum_array)`, `intent(in)` *area*, `real(dp)`, `dimension(:)`, `intent(in)` *bkgd\_xmean*, `real(dp)`, `dimension(:)`, `intent(in)` *bkgd\_slope*, `real(dp)`, `dimension(:)`, `intent(in)` *xmax*, `real(dp)`, `dimension(:)`, `intent(in)` *c\_fwhh*, `real(dp)`, `dimension(:)`, `intent(in)` *fwhh*, `type(IXTdatum_array)`, `intent(in)` *xmean*, `type(IXTdatum_array)`, `intent(in)` *sigma*, `type(IXTdatum_array)`, `intent(in)` *g1*, `type(IXTdatum_array)`, `intent(in)` *g2*, `type(IXTstatus)` *status*)

Definition at line 122 of file `IXMmoments.f90`.

References `IXMstatus::IXCseverity_error`, `IXFset_moments()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.48.1.3** subroutine `IXMmoments::IXFdestroy_moments` (`type(IXTmoments)` *arg*, `type(IXTstatus)` *status*)

Definition at line 53 of file `IXMmoments.f90`.

References `NXUmodule::status`.

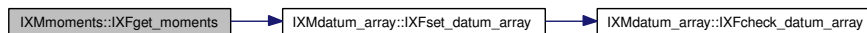


**5.48.1.4** subroutine IXMmoments::IXFget\_moments (type(IXTmoments) *var*, type(IXTstatus) *status*, type(IXTdatum\_array),intent(out),optional *area*, real(dp),dimension(:) ,intent(out),optional *bkgd\_xmean*, real(dp),dimension(:) ,intent(out),optional *bkgd\_slope*, real(dp),dimension(:) ,intent(out),optional *xmax*, real(dp),dimension(:) ,intent(out),optional *c\_fwhh*, real(dp),dimension(:) ,intent(out),optional *fwhh*, type(IXTdatum\_array),intent(out),optional *xmean*, type(IXTdatum\_array),intent(out),optional *sigma*, type(IXTdatum\_array),intent(out),optional *g1*, type(IXTdatum\_array),intent(out),optional *g2*, type(IXTmoments),intent(out),optional *wout*)

Definition at line 238 of file IXMmoments.f90.

References IXMdatum\_array::IXFset\_datum\_array(), and NXUmodule::status.

Here is the call graph for this function:



**5.48.1.5** subroutine IXMmoments::IXFoperation\_run\_moments (type(IXToperation) *op*, character(len=\*) *field*, type(IXTmoments) *arg*, type(IXTstatus) *status*)

Definition at line 93 of file IXMmoments.f90.

References NXUmodule::status.

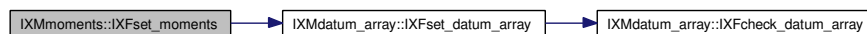
**5.48.1.6** subroutine IXMmoments::IXFset\_moments (type(IXTmoments) *var*, type(IXTstatus),intent(inout) *status*, type(IXTdatum\_array),intent(in),optional *area*, real(dp),dimension(:) ,intent(in),optional *bkgd\_xmean*, real(dp),dimension(:) ,intent(in),optional *bkgd\_slope*, real(dp),dimension(:) ,intent(in),optional *xmax*, real(dp),dimension(:) ,intent(in),optional *c\_fwhh*, real(dp),dimension(:) ,intent(in),optional *fwhh*, type(IXTdatum\_array),intent(in),optional *xmean*, type(IXTdatum\_array),intent(in),optional *sigma*, type(IXTdatum\_array),intent(in),optional *g1*, type(IXTdatum\_array),intent(in),optional *g2*, type(IXTmoments),intent(in),optional *ref*)

Definition at line 179 of file IXMmoments.f90.

References IXMstatus::IXCseverity\_error, IXMdatum\_array::IXFset\_datum\_array(), and NXUmodule::status.

Referenced by IXFcreate\_moments().

Here is the call graph for this function:



## 5.49 IXMmoments\_utils Namespace Reference

### Functions

- subroutine `get_moments` (`x`, `y`, `e`, `x_min`, `x_max`, `prominence`, `status`, `&area`, `bkgd`, `c`, `c_fwhm`, `h`, `w`, `xbar`, `sig`, `gam1`, `gam2`, `sig_xbar`, `sig_sig`, `sig_gam1`, `sig_gam2`, `pk_min`, `pk_max`, `bkgd_min`, `bkgd_max`)

### 5.49.1 Function Documentation

5.49.1.1 subroutine `IXMmoments_utils::get_moments`  
`(real(dp),dimension(:),intent(in) x, real(dp),dimension(:),intent(in) y, real(dp),dimension(:),intent(in) e, real(dp),intent(in) x_min, real(dp),intent(in) x_max, real(dp),intent(in) prominence, type(IXTstatus),intent(inout) status, &,intent(out) area, real(dp),intent(out) bkgd, real(dp),intent(out) c, real(dp),intent(out) c_fwhm, real(dp),intent(out) h, real(dp),intent(out) w, real(dp),intent(out) xbar, real(dp),intent(out) sig, real(dp),intent(out) gam1, real(dp),intent(out) gam2, sig_xbar, sig_sig, sig_gam1, sig_gam2, pk_min, pk_max, bkgd_min, bkgd_max)`

Definition at line 17 of file `IXMmoments_utils.f90`.

References `IXMstatus::IXCseverity_error`, `IXMintegrate::IXFintegrate_1d_points()`, and `NXU-module::status`.

Referenced by `IXMdataset_2d::IXFmoments_dataset_2d()`.

Here is the call graph for this function:



## 5.50 IXMneutron\_constants Namespace Reference

### Variables

- real(dp), parameter `c_t_to_k` =  $1.0e3\_dp * \text{neutron\_mass\_mantissa} / \text{hbar\_mantissa}$
- real(dp), parameter `c_t_to_lam` =  $\text{twopi\_dp} / \text{c\_t\_to\_k}$
- real(dp), parameter `c_t_to_emev` =  $0.5e7\_dp * \text{neutron\_mass\_mantissa} / \text{electron\_charge\_mantissa}$
- real(dp), parameter `c_t_to_ewav` =  $0.5e9\_dp * \text{neutron\_mass\_mantissa} / (\text{twopi\_dp} * \text{hbar\_mantissa} * \text{speed\_of\_light\_mantissa})$
- real(dp), parameter `c_t_to_ethz` =  $0.5e7\_dp * \text{neutron\_mass\_mantissa} / (\text{twopi\_dp} * \text{hbar\_mantissa})$
- real(dp), parameter `c_t_to_q` =  $2.0\_dp * \text{c\_t\_to\_k}$
- real(dp), parameter `c_t_to_sq` =  $\text{c\_t\_to\_q} ** 2$
- real(dp), parameter `c_t_to_d` =  $\text{twopi\_dp} / \text{c\_t\_to\_q}$
- real(dp), parameter `c_emev_to_ewav` =  $100.0\_dp * \text{electron\_charge\_mantissa} / (\text{twopi\_dp} * \text{hbar\_mantissa} * \text{speed\_of\_light\_mantissa})$
- real(dp), parameter `c_emev_to_ethz` =  $\text{electron\_charge\_mantissa} / (\text{twopi\_dp} * \text{hbar\_mantissa})$
- real(dp), parameter `c_v_to_emev` =  $5.0e-6\_dp * \text{neutron\_mass\_mantissa} / \text{electron\_charge\_mantissa}$
- real(dp), parameter `c_k_to_emev` =  $5.0\_dp * \text{hbar\_mantissa} * \text{hbar\_mantissa} / (\text{neutron\_mass\_mantissa} * \text{electron\_charge\_mantissa})$

### 5.50.1 Variable Documentation

**5.50.1.1** real(dp),parameter IXMneutron\_constants::c\_emev\_to\_ethz =  $\text{electron\_charge\_mantissa} / (\text{twopi\_dp} * \text{hbar\_mantissa})$

Definition at line 36 of file IXMneutron\_constants.f90.

**5.50.1.2** real(dp),parameter IXMneutron\_constants::c\_emev\_to\_ewav =  $100.0\_dp * \text{electron\_charge\_mantissa} / (\text{twopi\_dp} * \text{hbar\_mantissa} * \text{speed\_of\_light\_mantissa})$

Definition at line 35 of file IXMneutron\_constants.f90.

**5.50.1.3** real(dp),parameter IXMneutron\_constants::c\_k\_to\_emev =  $5.0\_dp * \text{hbar\_mantissa} * \text{hbar\_mantissa} / (\text{neutron\_mass\_mantissa} * \text{electron\_charge\_mantissa})$

Definition at line 38 of file IXMneutron\_constants.f90.

**5.50.1.4** real(dp),parameter IXMneutron\_constants::c\_t\_to\_d =  $\text{twopi\_dp} / \text{c\_t\_to\_q}$

Definition at line 33 of file IXMneutron\_constants.f90.

**5.50.1.5** `real(dp),parameter IXMneutron_constants::c_t_to_emev =  
0.5e7_dp*neutron_mass_mantissa/electron_charge_mantissa`

Definition at line 28 of file IXMneutron\_constants.f90.

**5.50.1.6** `real(dp),parameter IXMneutron_constants::c_t_to_ethz =  
0.5e7_dp*neutron_mass_mantissa/(twopi_dp*hbar_mantissa)`

Definition at line 30 of file IXMneutron\_constants.f90.

**5.50.1.7** `real(dp),parameter IXMneutron_constants::c_t_to_ewav =  
0.5e9_dp*neutron_mass_mantissa/(twopi_dp*hbar_mantissa*speed_of_light_mantissa)`

Definition at line 29 of file IXMneutron\_constants.f90.

**5.50.1.8** `real(dp),parameter IXMneutron_constants::c_t_to_k =  
1.0e3_dp*neutron_mass_mantissa/hbar_mantissa`

Definition at line 26 of file IXMneutron\_constants.f90.

**5.50.1.9** `real(dp),parameter IXMneutron_constants::c_t_to_lam =  
twopi_dp/c_t_to_k`

Definition at line 27 of file IXMneutron\_constants.f90.

**5.50.1.10** `real(dp),parameter IXMneutron_constants::c_t_to_q =  
2.0_dp*c_t_to_k`

Definition at line 31 of file IXMneutron\_constants.f90.

**5.50.1.11** `real(dp),parameter IXMneutron_constants::c_t_to_sq = c_t_to_q**2`

Definition at line 32 of file IXMneutron\_constants.f90.

**5.50.1.12** `real(dp),parameter IXMneutron_constants::c_v_to_emev =  
5.0e-6_dp*neutron_mass_mantissa/electron_charge_mantissa`

Definition at line 37 of file IXMneutron\_constants.f90.

Referenced by `IXMfermi_chopper::IXFtransmission_gen_fermi_chopper()`, and `IXMfermi_chopper::IXFvariance_gen_fermi_chopper()`.

## 5.51 IXMneutron\_units Namespace Reference

### Variables

- integer(i4b), parameter n\_0 = 9
- integer(i4b), parameter n\_1 = 20
- integer(i4b), parameter n\_2 = 20
- character(len=4), parameter IXCcode\_t = 't '
- character(len=4), parameter IXCcode\_v = 'v '
- character(len=4), parameter IXCcode\_tau = 'tau '
- character(len=4), dimension(len=4), parameter character
- character(len=4), parameter parameter
- character(len=4), parameter IXCcode\_v2 = 'v2 '
- character(len=4), parameter IXCcode\_tau2 = 'tau2'
- character(len=4), parameter IXCcode\_lam2 = 'lam2'
- character(len=4), parameter IXCcode\_k2 = 'k2 '
- character(len=4), parameter IXCcode\_e2 = 'e2 '
- character(len=4), parameter IXCcode\_v1 = 'v1 '
- character(len=4), parameter IXCcode\_tau1 = 'tau1'
- character(len=4), parameter IXCcode\_lam1 = 'lam1'
- character(len=4), parameter IXCcode\_k1 = 'k1 '
- character(len=4), parameter IXCcode\_e1 = 'e1 '
- character(len=4), parameter IXCcode\_w = 'w '
- character(len=4), parameter IXCcode\_wn = 'wn '
- character(len=4), parameter IXCcode\_thz = 'thz '
- character(len=4), parameter IXCcode\_q = 'q '
- character(len=4), parameter IXCcode\_qplus = 'q+ '
- character(len=4), parameter IXCcode\_qminus = 'q- '
- character(len=long\_len), parameter IXCunit\_microsecond = 'Microsecond'
- integer(i4b), parameter list\_len = 26
- character(len=4), dimension(list\_len), parameter code\_list = (/ 't ', 'v ', 'tau ', 'lam ', 'k ', 'e ', 'd ', character(len=long\_len), parameter:: units\_list(list\_len) = (/ 'Microsecond', 'm/s ', 's/m ', 'Angstrom ', 'Angstrom^-1', 'meV ', 'Angstrom ', 'm/s ', 's/m ', 'Angstrom ', 'Angstrom^-1', 'meV ', 'm/s ', 's/m ', 'Angstrom ', 'Angstrom^-1', 'meV ', 'meV ', 'cm^-1 ', 'THz ', 'Angstrom^-1', 'Angstrom^-1', 'Angstrom^-1', 'Angstrom^2 ', 'Angstrom^2 ', 'Angstrom^2 ', 'Angstrom^2 ' /)
- character(len=long\_len), dimension(list\_len), parameter cap\_list = (/ 'time-of-flight ', 'neutron speed ', 'neutron inverse speed ', 'wavelength ', 'wavevector ', 'Energy ', 'd-spacing ', 'final neutron speed ', 'final neutron inverse speed', 'final wavelength ', 'final wavevector ', 'final energy ', 'final neutron speed ', 'final neutron inverse speed', 'final wavelength ', 'final wavevector ', 'incident energy ', 'energy transfer ', 'energy transfer ', 'energy transfer ', 'momentum transfer ', 'momentum transfer ', 'momentum transfer ', 'square of momentum transfer', 'square of momentum transfer', 'square of momentum transfer' /)
- character(len=4), parameter IXCspecnoC = 'spno'
- character(len=4), parameter IXCworknoC = 'wkno'
- character(len=4), parameter IXCcountsC = 'cts '
- character(len=long\_len), parameter IXCcountsU = 'Counts'
- character(len=long\_len), parameter IXCspecnoU = 'Spectrum Number'
- character(len=long\_len), parameter IXCworknoU = 'Workspace Number'
- character(len=4), parameter IXCnullcode = 'null'

- `character(len=long_len), parameter IXCnullunits = 'Null Units'`
- `character(len=4), dimension(n_0), parameter u_0 = (/ 't ', 'v ', 'tau ', 'lam ', 'k ', 'e ', 'd ', 'q ', 'sq ' /)`
- `real(dp), dimension(n_0), parameter a_0 = (/ 0, 1,-1,-1, 1, 2,-1, 1, 2 /)`
- `real(dp), dimension(n_0), parameter b_0 = (/ 0, 0, 0, 0, 0, 0,-1, 1, 2 /)`
- `real(dp), dimension(n_0), parameter g_0 = (/ 1,-1, 1, 1,-1,-2, 1,-1,-2 /)`
- `real(dp), dimension(n_0), parameter c_0 = (/ 1.0_dp, 1.0e6_dp, 1.0e-6_dp, c_t_to_lam, c_t_to_k, integer(i4b),parameter:: qopt_0(n_0)= (/ 0, 0, 0, 0, 0, 0, 0, 0 /)`
- `character(len=4), dimension(n_1), parameter u_1 = (/ 't ', 'v ', 'tau ', 'lam ', 'k ', 'e ', 'v2 ', real(dp),parameter:: a_1(n_1)= (/ 0, 1,-1,-1, 1, 2, 1,-1,-1, 1, 2, 2, 2, 0, 0, 0, 0, 0 /)`
- `real(dp), dimension(n_1), parameter b_1 = (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 /)`
- `real(dp), dimension(n_1), parameter g_1 = (/ 1,-1, 1, 1,-1,-2,-1, 1, 1,-1,-2,-2,-2,-2, 0, 0, 0, 0, 0 /)`
- `real(dp), dimension(n_1) c_1`
- `integer(i4b), dimension(n_1), parameter qopt_1 = (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, -1, 2, 2, -2 /)`
- `character(len=4), dimension(n_2), parameter u_2 = (/ 't ', 'v ', 'tau ', 'lam ', 'k ', 'e ', 'v1 ', real(dp),parameter:: a_2(n_2)= (/ 0, 1,-1,-1, 1, 2, 1,-1,-1, 1, 2, 2, 2, 2, 0, 0, 0, 0, 0 /)`
- `real(dp), dimension(n_2), parameter b_2 = (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 /)`
- `real(dp), dimension(n_2), parameter g_2 = (/ 1,-1, 1, 1,-1,-2,-1, 1, 1,-1,-2,-2,-2,-2, 0, 0, 0, 0, 0 /)`
- `real(dp), dimension(n_2) c_2`
- `integer(i4b), dimension(n_2), parameter qopt_2 = (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, -1, 2, 2, -2 /)`

### 5.51.1 Variable Documentation

**5.51.1.1** `real(dp),dimension(n_0),parameter IXMneutron_units::a_0 = (/ 0, 1,-1,-1, 1, 2,-1, 1, 2 /)`

Definition at line 110 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_coefficients().

**5.51.1.2** `real(dp),dimension(n_0),parameter IXMneutron_units::b_0 = (/ 0, 0, 0, 0, 0, 0,-1, 1, 2 /)`

Definition at line 111 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_coefficients().

**5.51.1.3** `real(dp),dimension(n_1),parameter IXMneutron_units::b_1 = (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 /)`

Definition at line 122 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_coefficients().

**5.51.1.4** `real(dp),dimension(n_2),parameter IXMneutron_units::b_2 = (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 /)`

Definition at line 141 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_coefficients().

**5.51.1.5** `real(dp),dimension(n_0),parameter IXMneutron_units::c_0 = (/ 1.0_dp, 1.0e6_dp, 1.0e-6_dp, c_t_to_lam, c_t_to_k, integer(i4b),parameter:: qopt_0(n_0)= (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 /)`

Definition at line 113 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_coefficients().

**5.51.1.6** `real(dp),dimension(n_1) IXMneutron_units::c_1`

Definition at line 124 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_coefficients().

**5.51.1.7** `real(dp),dimension(n_2) IXMneutron_units::c_2`

Definition at line 143 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_coefficients().

**5.51.1.8** `character(len=long_len),dimension(list_len) ,parameter IXMneutron_units::cap_list = (/ 'time-of-flight ', 'neutron speed ', 'neutron inverse speed ', 'wavelength ', 'wavevector ', 'Energy ', 'd-spacing ', 'final neutron speed ', 'final neutron inverse speed', 'final wavelength ', 'final wavevector ', 'final energy ', 'final neutron speed ', 'final neutron inverse speed', 'final wavelength ', 'final wavevector ', 'incident energy ', 'energy transfer ', 'energy transfer ', 'energy transfer ', 'momentum transfer ', 'momentum transfer ', 'momentum transfer ', 'square of momentum transfer', 'square of momentum transfer', 'square of momentum transfer' /)`

Definition at line 69 of file IXMneutron\_units.f90.

Referenced by IXMunits::IXFmake\_label\_units().

**5.51.1.9** `character(len=4),dimension(len=4),parameter IXMneutron_units::character`

Definition at line 19 of file IXMneutron\_units.f90.

**5.51.1.10** `character(len=4),dimension(list_len),parameter IXMneutron_ -  
 units::code_list = (/ 't ','v ','tau ','lam ','k ','e ','d ',  
 character(len=long_len),parameter:: units_list(list_len)= (/  
 'Microsecond', 'm/s', 's/m', 'Angstrom', 'Angstrom^-1', 'meV',  
 'Angstrom', 'm/s', 's/m', 'Angstrom', 'Angstrom^-1', 'meV',  
 'm/s', 's/m', 'Angstrom', 'Angstrom^-1', 'meV', 'meV', 'cm^-1',  
 'THz', 'Angstrom^-1', 'Angstrom^-1', 'Angstrom^-1', 'Angstrom^2',  
 'Angstrom^2', 'Angstrom^2' /)`

Definition at line 34 of file IXMneutron\_units.f90.

Referenced by IXMunits::IXFcreate\_code\_units(), IXMunits::IXFcreate\_full\_units(), and IXMunits::IXFmake\_label\_units().

**5.51.1.11** `real(dp),dimension(n_0),parameter IXMneutron_units::g_0 = (/ 1,-1,  
 1, 1,-1,-2, 1,-1,-2 /)`

Definition at line 112 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_coefficients().

**5.51.1.12** `real(dp),dimension(n_1),parameter IXMneutron_units::g_1 = (/ 1,-1,  
 1, 1,-1,-2,-1, 1, 1,-1,-2,-2,-2, 0, 0, 0, 0, 0 /)`

Definition at line 123 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_coefficients().

**5.51.1.13** `real(dp),dimension(n_2),parameter IXMneutron_units::g_2 = (/ 1,-1,  
 1, 1,-1,-2,-1, 1, 1,-1,-2,-2,-2, 0, 0, 0, 0, 0 /)`

Definition at line 142 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_coefficients().

**5.51.1.14** `character(len=4),parameter IXMneutron_units::IXCcode_e1 = 'e1'`

Definition at line 20 of file IXMneutron\_units.f90.

**5.51.1.15** `character(len=4),parameter IXMneutron_units::IXCcode_e2 = 'e2'`

Definition at line 19 of file IXMneutron\_units.f90.

**5.51.1.16** `character(len=4),parameter IXMneutron_units::IXCcode_k1 = 'k1'`

Definition at line 20 of file IXMneutron\_units.f90.

**5.51.1.17** `character(len=4),parameter IXMneutron_units::IXCcode_k2 = 'k2'`

Definition at line 19 of file IXMneutron\_units.f90.



**5.51.1.18** `character(len=4),parameter IXMneutron _ units::IXCcode _ lam1 = 'lam1'`

Definition at line 20 of file IXMneutron \_ units.f90.

**5.51.1.19** `character(len=4),parameter IXMneutron _ units::IXCcode _ lam2 = 'lam2'`

Definition at line 19 of file IXMneutron \_ units.f90.

**5.51.1.20** `character(len=4),parameter IXMneutron _ units::IXCcode _ q = 'q'`

Definition at line 22 of file IXMneutron \_ units.f90.

**5.51.1.21** `character(len=4),parameter IXMneutron _ units::IXCcode _ qminus = 'q-`  
,

Definition at line 22 of file IXMneutron \_ units.f90.

**5.51.1.22** `character(len=4),parameter IXMneutron _ units::IXCcode _ qplus = 'q+'`

Definition at line 22 of file IXMneutron \_ units.f90.

**5.51.1.23** `character(len=4),parameter IXMneutron _ units::IXCcode _ t = 't'`

Definition at line 17 of file IXMneutron \_ units.f90.

**5.51.1.24** `character(len=4),parameter IXMneutron _ units::IXCcode _ tau = 'tau'`

Definition at line 17 of file IXMneutron \_ units.f90.

**5.51.1.25** `character(len=4),parameter IXMneutron _ units::IXCcode _ tau1 = 'tau1'`

Definition at line 20 of file IXMneutron \_ units.f90.

**5.51.1.26** `character(len=4),parameter IXMneutron _ units::IXCcode _ tau2 = 'tau2'`

Definition at line 19 of file IXMneutron \_ units.f90.

**5.51.1.27** `character(len=4),parameter IXMneutron _ units::IXCcode _ thz = 'thz'`

Definition at line 21 of file IXMneutron \_ units.f90.

**5.51.1.28** `character(len=4),parameter IXMneutron _ units::IXCcode _ v = 'v'`

Definition at line 17 of file IXMneutron \_ units.f90.

**5.51.1.29** `character(len=4),parameter IXMneutron_units::IXCcode_v1 = 'v1 '`

Definition at line 20 of file IXMneutron\_units.f90.

**5.51.1.30** `character(len=4),parameter IXMneutron_units::IXCcode_v2 = 'v2 '`

Definition at line 19 of file IXMneutron\_units.f90.

**5.51.1.31** `character(len=4),parameter IXMneutron_units::IXCcode_w = 'w '`

Definition at line 21 of file IXMneutron\_units.f90.

**5.51.1.32** `character(len=4),parameter IXMneutron_units::IXCcode_wn = 'wn '`

Definition at line 21 of file IXMneutron\_units.f90.

**5.51.1.33** `character(len=4),parameter IXMneutron_units::IXCcountsC = 'cts '`

Definition at line 99 of file IXMneutron\_units.f90.

**5.51.1.34** `character(len=long_len),parameter IXMneutron_units::IXCcountsU = 'Counts'`

Definition at line 100 of file IXMneutron\_units.f90.

**5.51.1.35** `character(len=4),parameter IXMneutron_units::IXCnullcode = 'null'`

Definition at line 102 of file IXMneutron\_units.f90.

**5.51.1.36** `character(len=long_len),parameter IXMneutron_units::IXCnullunits = 'Null Units'`

Definition at line 103 of file IXMneutron\_units.f90.

**5.51.1.37** `character(len=4),parameter IXMneutron_units::IXCspecnoC = 'spno'`

Definition at line 99 of file IXMneutron\_units.f90.

**5.51.1.38** `character(len=long_len),parameter IXMneutron_units::IXCspecnoU = 'Spectrum Number'`

Definition at line 100 of file IXMneutron\_units.f90.

**5.51.1.39** `character(len=long_len),parameter IXMneutron_units::IXCunit_microsecond = 'Microsecond'`

Definition at line 25 of file IXMneutron\_units.f90.

**5.51.1.40** `character(len=4),parameter IXMneutron _ units::IXCworknoC = 'wkno'`

Definition at line 99 of file IXMneutron \_ units.f90.

**5.51.1.41** `character(len=long _ len),parameter IXMneutron _ units::IXCworknoU = 'Workspace Number'`

Definition at line 101 of file IXMneutron \_ units.f90.

**5.51.1.42** `integer(i4b),parameter IXMneutron _ units::list _ len = 26`

Definition at line 33 of file IXMneutron \_ units.f90.

Referenced by IXMunits::IXFcreate \_ code \_ units(), IXMunits::IXFcreate \_ full \_ units(), and IXMunits::IXFmake \_ label \_ units().

**5.51.1.43** `integer(i4b),parameter IXMneutron _ units::n _ 0 = 9`

Definition at line 13 of file IXMneutron \_ units.f90.

Referenced by IXMunits \_ utils::units \_ check \_ codes(), and IXMunits \_ utils::units \_ coefficients().

**5.51.1.44** `integer(i4b),parameter IXMneutron _ units::n _ 1 = 20`

Definition at line 13 of file IXMneutron \_ units.f90.

Referenced by IXMunits \_ utils::units \_ check \_ codes(), and IXMunits \_ utils::units \_ coefficients().

**5.51.1.45** `integer(i4b),parameter IXMneutron _ units::n _ 2 = 20`

Definition at line 13 of file IXMneutron \_ units.f90.

Referenced by IXMunits \_ utils::units \_ check \_ codes(), and IXMunits \_ utils::units \_ coefficients().

**5.51.1.46** `character(len=4),parameter IXMneutron _ units::parameter`

Definition at line 19 of file IXMneutron \_ units.f90.

**5.51.1.47** `integer(i4b),dimension(n _ 1),parameter IXMneutron _ units::qopt _ 1 = (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, -1, 2, 2, -2 /)`

Definition at line 129 of file IXMneutron \_ units.f90.

Referenced by IXMunits \_ utils::units \_ coefficients().

**5.51.1.48** `integer(i4b),dimension(n _ 2),parameter IXMneutron _ units::qopt _ 2 = (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, -1, 2, 2, -2 /)`

Definition at line 148 of file IXMneutron \_ units.f90.

Referenced by IXMunits \_ utils::units \_ coefficients().

**5.51.1.49** `character(len=4),dimension(n_0),parameter IXMneutron_units::u_0 = (/ 't ','v ','tau ','lam ','k ','e ','d ','q ','sq ' /)`

Definition at line 109 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_check\_codes(), and IXMunits\_utils::units\_coefficients().

**5.51.1.50** `character(len=4),dimension(n_1),parameter IXMneutron_units::u_1 = (/ 't ','v ','tau ','lam ','k ','e ','v2 ', real(dp),parameter:: a_1(n_1)= (/ 0, 1,-1,-1, 1, 2, 1,-1,-1, 1, 2, 2, 2, 2, 0, 0, 0, 0, 0, 0 /)`

Definition at line 118 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_check\_codes(), and IXMunits\_utils::units\_coefficients().

**5.51.1.51** `character(len=4),dimension(n_2),parameter IXMneutron_units::u_2 = (/ 't ','v ','tau ','lam ','k ','e ','v1 ', real(dp),parameter:: a_2(n_2)= (/ 0, 1,-1,-1, 1, 2, 1,-1,-1, 1, 2, 2, 2, 2, 0, 0, 0, 0, 0, 0 /)`

Definition at line 137 of file IXMneutron\_units.f90.

Referenced by IXMunits\_utils::units\_check\_codes(), and IXMunits\_utils::units\_coefficients().

## 5.52 IXMoperation Namespace Reference

### Classes

- struct IXTop\_display
- struct IXTop\_matlabread
- struct IXTop\_matlabwrite
- struct IXTop\_get
- struct IXTop\_set
- struct IXTop\_fileread
- struct IXTop\_filewrite
- struct IXTop\_init
- struct IXToperation
- interface IXFoperationMake
- interface IXFoperation\_run
- interface IXFoperation\_run\_ptr
- interface IXFoperation\_run\_alloc
- interface IXFoperationPrint
- interface IXFdisplay
- interface IXFcheck

### Functions

- logical IXFile\_op (op)
- subroutine initialiseOperation (op)
- subroutine removeBlanks (buffer)
- subroutine makeArrayNameString (buffer, name, dims\_array)
- type(IXTop\_matlabread) IXFop\_matlabreadMake (prhs)
- type(IXTop\_matlabwrite) IXFop\_matlabwriteMake (plhs)
- type(IXTop\_fileread) IXFop\_filereadMake (fio, path)
- type(IXTop\_filewrite) IXFop\_filewriteMake (fio, path)
- type(IXTop\_get) IXFop\_getMake (wrapped\_var)
- type(IXTop\_set) IXFop\_setMake (wrapped\_var)
- type(IXTop\_init) IXFop\_initMake (i)
- subroutine IXFoperationArrayInit (op, name, field, n, status)
- subroutine IXFoperationStart (op, name, field, status)
- subroutine IXFoperationFinish (op, field, status)
- subroutine makeOperationDisplay (op, op\_display, status)
- subroutine makeOperationSet (op, op\_set, status)
- subroutine makeOperationGet (op, op\_get, status)
- subroutine makeOperationMatlabRead (op, op\_matlabread, status)
- subroutine makeOperationMatlabWrite (op, op\_matlabwrite, status)
- subroutine makeOperationFileRead (op, op\_fileread, status)
- subroutine makeOperationFileWrite (op, op\_filewrite, status)
- subroutine makeOperationInit (op, op\_init, status)
- subroutine runOperationCharacter (op, name, value, status)
- subroutine runOperationReal (op, name, value, status)
- subroutine runOperationLogical (op, name, value, status)
- subroutine IXFoperationCleanup (op, status)
- subroutine runOperationInteger (op, name, value, status)

- subroutine IXFoperation\_run\_data\_source (op, field, arg, status)
- subroutine IXFoperation\_run\_array\_data\_source (op, name, value, status)
- subroutine IXFdisplay\_data\_source (value, status)
- subroutine IXFdisplay\_array\_data\_source (w1, s)
- subroutine IXFoperation\_run\_fileio (op, name, value, status)
- subroutine IXFoperation\_run\_array\_fileio (op, name, value, status)
- subroutine IXFcheck\_fileio (value, status)
- subroutine IXFdisplay\_fileio (value, status)
- subroutine IXFdisplay\_array\_fileio (w1, s)
- subroutine IXFcheck\_array\_fileio (w1, s)
- subroutine IXFoperation\_run\_history (op, field, arg, status)
- subroutine IXFoperation\_run\_array\_history (op, name, value, status)
- subroutine IXFdisplay\_history (value, status)
- subroutine IXFdisplay\_array\_history (w1, s)

## Variables

- character(len=\*), parameter nameform = '( " "
- character(len=\*), parameter A
- character(len=\*), parameter i = ')'
- character(len=\*), dimension(g9.3, 1x), parameter realform = '( " "
- character(len=\*), dimension(i5, 1x), parameter intform = '( " "
- character(len=\*), dimension(a), parameter charform = '( " "
- character(len=\*), parameter fieldnameformat = '(A
- character(len=\*), parameter \_
- character(len=\*), parameter I5

## 5.52.1 Function Documentation

### 5.52.1.1 subroutine IXMoperation::initialiseOperation (type(IXToperation) op)

Definition at line 145 of file IXMoperation.f90.

Referenced by IXFoperationCleanup(), makeOperationDisplay(), makeOperationFileRead(), makeOperationFileWrite(), makeOperationGet(), makeOperationInit(), makeOperationMatlabRead(), makeOperationMatlabWrite(), and makeOperationSet().

### 5.52.1.2 subroutine IXMoperation::IXFcheck\_array\_fileio (type(IXTfileio),dimension(:) w1, type(IXTstatus) s)

Definition at line 1124 of file IXMoperation.f90.

References i.

### 5.52.1.3 subroutine IXMoperation::IXFcheck\_fileio (type(IXTfileio) value, type(IXTstatus) status)

Definition at line 1096 of file IXMoperation.f90.

#### 5.52.1.4 subroutine IXMoperation::IXFdisplay\_array\_data\_source (type(IXTdata\_source),dimension(:) w1, type(IXTstatus) s)

Definition at line 1051 of file IXMoperation.f90.

References i.

#### 5.52.1.5 subroutine IXMoperation::IXFdisplay\_array\_fileio (type(IXTfileio),dimension(:) w1, type(IXTstatus) s)

Definition at line 1110 of file IXMoperation.f90.

References i.

#### 5.52.1.6 subroutine IXMoperation::IXFdisplay\_array\_history (type(IXThistory),dimension(:) w1, type(IXTstatus) s)

Definition at line 1173 of file IXMoperation.f90.

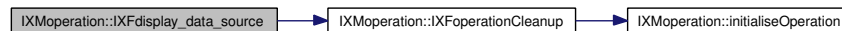
References i.

#### 5.52.1.7 subroutine IXMoperation::IXFdisplay\_data\_source (type(IXTdata\_source) value, type(IXTstatus) status)

Definition at line 1042 of file IXMoperation.f90.

References IXFoperationCleanup(), and NXUmodule::status.

Here is the call graph for this function:

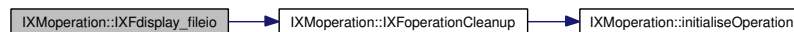


#### 5.52.1.8 subroutine IXMoperation::IXFdisplay\_fileio (type(IXTfileio) value, type(IXTstatus) status)

Definition at line 1101 of file IXMoperation.f90.

References IXFoperationCleanup(), and NXUmodule::status.

Here is the call graph for this function:

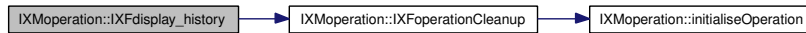


#### 5.52.1.9 subroutine IXMoperation::IXFdisplay\_history (type(IXThistory) value, type(IXTstatus) status)

Definition at line 1164 of file IXMoperation.f90.

References IXFoperationCleanup(), and NXUmodule::status.

Here is the call graph for this function:



#### 5.52.1.10 logical IXMoperation::IXFfile\_op (type(IXToperation),intent(in) op)

Definition at line 135 of file IXMoperation.f90.

#### 5.52.1.11 type(IXTop\_fileread) IXMoperation::IXFop\_filereadMake (type(IXTfileio) fio, character(len=\*) path)

Definition at line 499 of file IXMoperation.f90.

#### 5.52.1.12 type(IXTop\_filewrite) IXMoperation::IXFop\_filewriteMake (type(IXTfileio) fio, character(len=\*) path)

Definition at line 508 of file IXMoperation.f90.

#### 5.52.1.13 type(IXTop\_get) IXMoperation::IXFop\_getMake (type(IXTwrapped\_var) wrapped\_var)

Definition at line 517 of file IXMoperation.f90.

#### 5.52.1.14 type(IXTop\_init) IXMoperation::IXFop\_initMake (integer i)

Definition at line 531 of file IXMoperation.f90.

References i.

#### 5.52.1.15 type(IXTop\_matlabread) IXMoperation::IXFop\_matlabreadMake (integer(cpointer\_t) prhs)

Definition at line 484 of file IXMoperation.f90.

#### 5.52.1.16 type(IXTop\_matlabwrite) IXMoperation::IXFop\_matlabwriteMake (integer(cpointer\_t) plhs)

Definition at line 491 of file IXMoperation.f90.

#### 5.52.1.17 type(IXTop\_set) IXMoperation::IXFop\_setMake (type(IXTwrapped\_var) wrapped\_var)

Definition at line 524 of file IXMoperation.f90.

#### 5.52.1.18 subroutine IXMoperation::IXFoperation\_run\_array\_data\_- source (type(IXToperation) op, character(len=\*) name, type(IXTdata\_source),dimension(:) value, type(IXTstatus) status)

Definition at line 1027 of file IXMoperation.f90.



References `i`, and `NXUmodule::status`.

**5.52.1.19** subroutine `IXMoperation::IXFoperation_run_array_fileio` (`type(IXToperation) op`, `character(len=*) name`, `type(IXTfileio),dimension(:) value`, `type(IXTstatus) status`)

Definition at line 1082 of file `IXMoperation.f90`.

References `i`, and `NXUmodule::status`.

**5.52.1.20** subroutine `IXMoperation::IXFoperation_run_array_history` (`type(IXToperation) op`, `character(len=*) name`, `type(IXThistory),dimension(:) value`, `type(IXTstatus) status`)

Definition at line 1150 of file `IXMoperation.f90`.

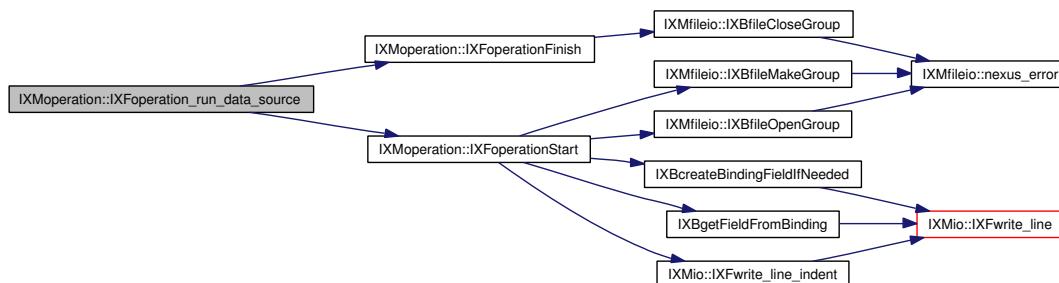
References `i`, and `NXUmodule::status`.

**5.52.1.21** subroutine `IXMoperation::IXFoperation_run_data_source` (`type(IXToperation) op`, `character(len=*) field`, `type(IXTdata_source) arg`, `type(IXTstatus) status`)

Definition at line 1012 of file `IXMoperation.f90`.

References `IXFoperationFinish()`, `IXFoperationStart()`, and `NXUmodule::status`.

Here is the call graph for this function:

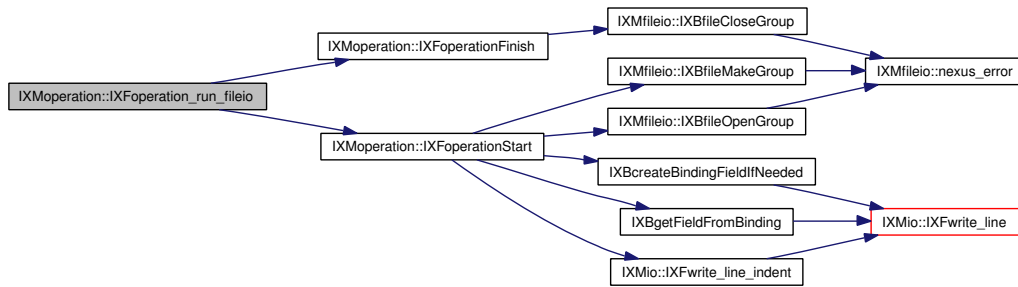


**5.52.1.22** subroutine `IXMoperation::IXFoperation_run_fileio` (`type(IXToperation) op`, `character(len=*) name`, `type(IXTfileio) value`, `type(IXTstatus) status`)

Definition at line 1066 of file `IXMoperation.f90`.

References `NXUmodule::file_id`, `IXFoperationFinish()`, `IXFoperationStart()`, and `NXUmodule::status`.

Here is the call graph for this function:

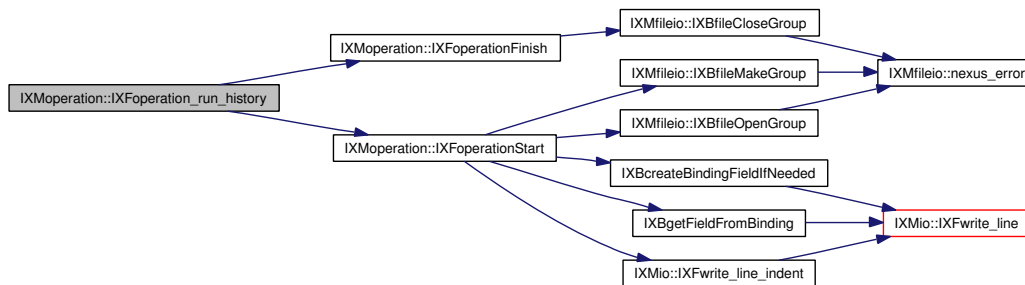


**5.52.1.23** subroutine `IXMoperation::IXFoperation_run_history`  
 (type(`IXToperation`) *op*, character(len=\*) *field*, type(`IXThistory`) *arg*,  
 type(`IXTstatus`) *status*)

Definition at line 1136 of file `IXMoperation.f90`.

References `IXFoperationFinish()`, `IXFoperationStart()`, and `NXUmodule::status`.

Here is the call graph for this function:

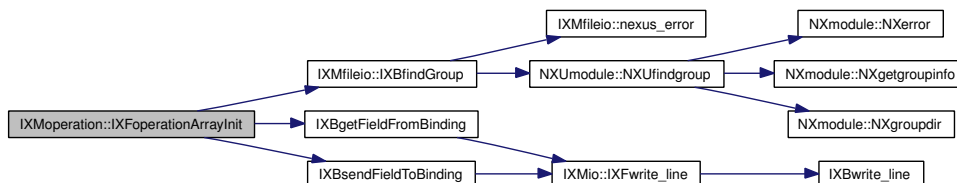


**5.52.1.24** subroutine `IXMoperation::IXFoperationArrayInit` (type(`IXToperation`)  
*op*, character(len=\*) *name*, character(len=\*) *field*, integer,intent(inout)  
*n*, type(`IXTstatus`) *status*)

Definition at line 538 of file `IXMoperation.f90`.

References `fieldnameformat`, `IXMoperation_interfaces::IXBcreateClassArray`, `IXMfileio::IXBfindGroup()`, `IXBgetFieldFromBinding()`, `IXMoperation_interfaces::IXBgetNumberOfElements`, `IXBsendFieldToBinding()`, and `NXUmodule::status`.

Here is the call graph for this function:



### 5.52.1.25 subroutine IXMoperation::IXFoperationCleanup (type(IXToperation) *op*, type(IXTstatus) *status*)

Definition at line 960 of file IXMoperation.f90.

References initialiseOperation().

Referenced by IXFdisplay\_data\_source(), IXFdisplay\_fileio(), and IXFdisplay\_history().

Here is the call graph for this function:



### 5.52.1.26 subroutine IXMoperation::IXFoperationFinish (type(IXToperation) *op*, character(len=\*) *field*, type(IXTstatus) *status*)

Definition at line 657 of file IXMoperation.f90.

References IXMfileio::IXBfileCloseGroup().

Referenced by IXMbase::IXFoperation\_run\_base(), IXFoperation\_run\_data\_source(), IXFoperation\_run\_fileio(), and IXFoperation\_run\_history().

Here is the call graph for this function:



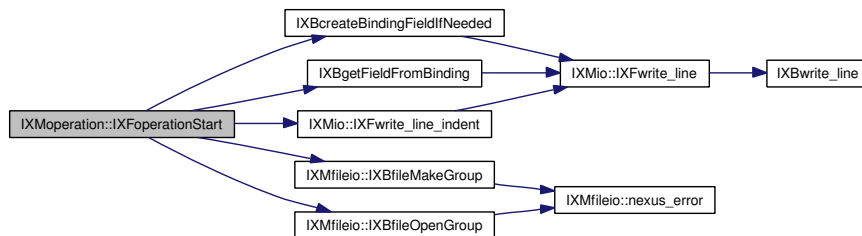
### 5.52.1.27 subroutine IXMoperation::IXFoperationStart (type(IXToperation) *op*, character(len=\*) *name*, character(len=\*) *field*, type(IXTstatus) *status*)

Definition at line 587 of file IXMoperation.f90.

References A, IXBcreateBindingFieldIfNeeded(), IXMfileio::IXBfileMakeGroup(), IXMfileio::IXBfileOpenGroup(), IXBgetFieldFromBinding(), IXMio::IXFwrite\_line\_indent(), and NXUmodule::status.

Referenced by IXMbase::IXFoperation\_run\_base(), IXFoperation\_run\_data\_source(), IXFoperation\_run\_fileio(), and IXFoperation\_run\_history().

Here is the call graph for this function:

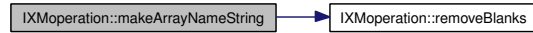


**5.52.1.28** subroutine `IXMoperation::makeArrayNameString` (`character(len=*)` *buffer*, `character(len=*)` *name*, `integer,dimension(:)` *dims\_array*)

Definition at line 464 of file `IXMoperation.f90`.

References `i`, and `removeBlanks()`.

Here is the call graph for this function:



**5.52.1.29** subroutine `IXMoperation::makeOperationDisplay` (`type(IXToperation)` *op*, `type(IXTop_display)` *op\_display*, `type(IXTstatus)` *status*)

Definition at line 710 of file `IXMoperation.f90`.

References `initialiseOperation()`.

Here is the call graph for this function:



**5.52.1.30** subroutine `IXMoperation::makeOperationFileRead` (`type(IXToperation)` *op*, `type(IXTop_fileread)` *op\_fileread*, `type(IXTstatus)` *status*)

Definition at line 778 of file `IXMoperation.f90`.

References `initialiseOperation()`.

Here is the call graph for this function:

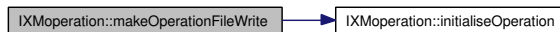


**5.52.1.31** subroutine `IXMoperation::makeOperationFileWrite` (`type(IXToperation)` *op*, `type(IXTop_filewrite)` *op\_filewrite*, `type(IXTstatus)` *status*)

Definition at line 791 of file `IXMoperation.f90`.

References `initialiseOperation()`.

Here is the call graph for this function:



**5.52.1.32** subroutine `IXMoperation::makeOperationGet` (`type(IXToperation)` *op*, `type(IXTop_get)` *op\_get*, `type(IXTstatus)` *status*)

Definition at line 737 of file `IXMoperation.f90`.

References initialiseOperation().

Here is the call graph for this function:



#### 5.52.1.33 subroutine IXMoperation::makeOperationInit (type(IXToperation) *op*, type(IXTop\_init) *op\_init*, type(IXTstatus) *status*)

Definition at line 804 of file IXMoperation.f90.

References initialiseOperation().

Here is the call graph for this function:

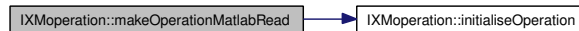


#### 5.52.1.34 subroutine IXMoperation::makeOperationMatlabRead (type(IXToperation) *op*, type(IXTop\_matlabread) *op\_matlabread*, type(IXTstatus) *status*)

Definition at line 750 of file IXMoperation.f90.

References initialiseOperation().

Here is the call graph for this function:

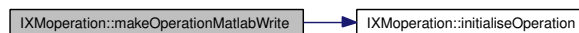


#### 5.52.1.35 subroutine IXMoperation::makeOperationMatlabWrite (type(IXToperation) *op*, type(IXTop\_matlabwrite) *op\_matlabwrite*, type(IXTstatus) *status*)

Definition at line 764 of file IXMoperation.f90.

References initialiseOperation().

Here is the call graph for this function:



#### 5.52.1.36 subroutine IXMoperation::makeOperationSet (type(IXToperation) *op*, type(IXTop\_set) *op\_set*, type(IXTstatus) *status*)

Definition at line 724 of file IXMoperation.f90.

References initialiseOperation().

Here is the call graph for this function:



#### 5.52.1.37 subroutine IXMoperation::removeBlanks (character(len=\*),intent(inout) *buffer*)

Definition at line 446 of file IXMoperation.f90.

References i.

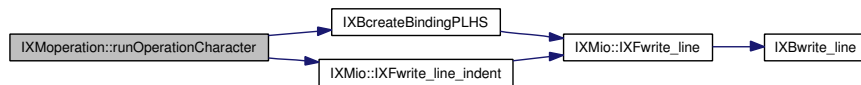
Referenced by makeArrayNameString().

#### 5.52.1.38 subroutine IXMoperation::runOperationCharacter (type(IXToperation) *op*, character(len=\*) *name*, character(len=\*) *value*, type(IXTstatus) *status*)

Definition at line 817 of file IXMoperation.f90.

References IXBcreateBindingPLHS(), IXMio::IXFwrite\_line\_indent(), and NXUmodule::status.

Here is the call graph for this function:

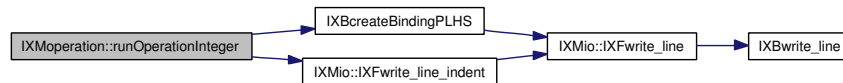


#### 5.52.1.39 subroutine IXMoperation::runOperationInteger (type(IXToperation) *op*, character(len=\*) *name*, integer(i4b) *value*, type(IXTstatus) *status*)

Definition at line 966 of file IXMoperation.f90.

References IXBcreateBindingPLHS(), IXMio::IXFwrite\_line\_indent(), and NXUmodule::status.

Here is the call graph for this function:

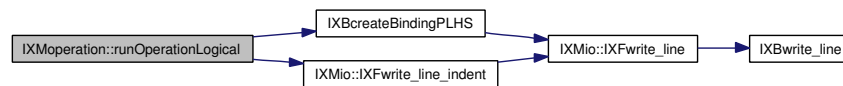


#### 5.52.1.40 subroutine IXMoperation::runOperationLogical (type(IXToperation) *op*, character(len=\*) *name*, logical *value*, type(IXTstatus) *status*)

Definition at line 912 of file IXMoperation.f90.

References IXBcreateBindingPLHS(), IXMio::IXFwrite\_line\_indent(), and NXUmodule::status.

Here is the call graph for this function:

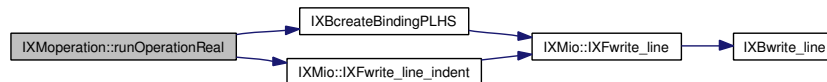


#### 5.52.1.41 subroutine IXMoperation::runOperationReal (type(IXToperation) *op*, character(len=\*) *name*, real(dp) *value*, type(IXTstatus) *status*)

Definition at line 868 of file IXMoperation.f90.

References IXBcreateBindingPLHS(), IXMio::IXFwrite\_line\_indent(), and NXUmodule::status.

Here is the call graph for this function:



## 5.52.2 Variable Documentation

### 5.52.2.1 character(len=\*),parameter IXMoperation::\_

Definition at line 62 of file IXMoperation.f90.

### 5.52.2.2 character(len=\*),parameter IXMoperation::A

Definition at line 57 of file IXMoperation.f90.

Referenced by IXFoperationStart().

### 5.52.2.3 character(len=\*),dimension(a),parameter IXMoperation::charform = '( " "

Definition at line 60 of file IXMoperation.f90.

### 5.52.2.4 character(len=\*),parameter IXMoperation::fieldnameformat = '(A

Definition at line 62 of file IXMoperation.f90.

Referenced by IXFoperationArrayInit().

### 5.52.2.5 character(len=\*),parameter IXMoperation::i = ")'

Definition at line 57 of file IXMoperation.f90.

Referenced by IXFcheck\_array\_fileio(), IXFdisplay\_array\_data\_source(), IXFdisplay\_array\_data\_fileio(), IXFdisplay\_array\_history(), IXFop\_initMake(), IXFoperation\_run\_array\_data\_source(), IXFoperation\_run\_array\_fileio(), IXFoperation\_run\_array\_history(), local\_to\_vax\_ints(), local\_to\_vax\_shorts(), makeArrayNameString(), removeBlanks(), vax\_to\_local\_ints(), and vax\_to\_local\_shorts().

**5.52.2.6** `character(len=*),parameter IXMoperation::I5`

Definition at line 62 of file IXMoperation.f90.

**5.52.2.7** `character(len=*),dimension(i5,1x),parameter IXMoperation::intform = '(`  
`„`

Definition at line 59 of file IXMoperation.f90.

**5.52.2.8** `character(len=*),parameter IXMoperation::nameform = '(“ ”`

Definition at line 57 of file IXMoperation.f90.

**5.52.2.9** `character(len=*),dimension(g9.3,1x),parameter IXMoperation::realform =`  
`'(“ ”`

Definition at line 58 of file IXMoperation.f90.



## 5.53 IXMoperation\_interfaces Namespace Reference

### Classes

- interface **IXBgetFromBinding**
- interface **IXBgetFromBindingAlloc**

### Variables

- integer, external **IXBgetNumberOfElements**
- integer(cpointer\_t), external **IXBcreateClassArray**

#### 5.53.1 Variable Documentation

##### 5.53.1.1 integer(cpointer\_t),external IXMoperation\_interfaces::IXBcreateClassArray

Definition at line 18 of file IXMoperation\_interfaces.f90.

Referenced by IXMoperation::IXFoperationArrayInit().

##### 5.53.1.2 integer,external IXMoperation\_interfaces::IXBgetNumberOfElements

Definition at line 17 of file IXMoperation\_interfaces.f90.

Referenced by IXMoperation::IXFoperationArrayInit().

## 5.54 IXMoptions Namespace Reference

### Classes

- struct `IXToptions`

### Functions

- subroutine `IXFoperation_run_options` (`op`, `field`, `arg`, `status`)
- subroutine `IXFset_options` (`opt`, `status`, `bgrd`, `m_units`, `m_rebin`, `d_units`, `d_rebin`, `ref`)
- subroutine `IXFget_options` (`opt`, `status`, `bgrd`, `m_units`, `m_rebin`, `d_units`, `d_rebin`, `wout`)
- subroutine `IXFcheck_options` (`opt`, `status`)
- subroutine `IXFdestroy_options` (`opt`, `status`)
- subroutine `IXFcreate_options` (`opt`, `bgrd`, `m_units`, `m_rebin`, `d_units`, `d_rebin`, `status`)
- logical `IXFpresent` (`opt`, `bgrd`, `m_units`, `m_rebin`, `d_units`, `d_rebin`)

### 5.54.1 Function Documentation

#### 5.54.1.1 subroutine `IXMoptions::IXFcheck_options` (`type(IXToptions)` *opt*, `type(IXTstatus)` *status*)

Definition at line 105 of file `IXMoptions.f90`.

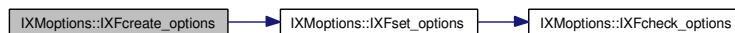
Referenced by `IXFset_options()`.

#### 5.54.1.2 subroutine `IXMoptions::IXFcreate_options` (`type(IXToptions)`, `intent(out)` *opt*, `logical, intent(in)` *bgrd*, `logical, intent(in)` *m\_units*, `logical, intent(in)` *m\_rebin*, `logical, intent(in)` *d\_units*, `logical, intent(in)` *d\_rebin*, `type(IXTstatus)` *status*)

Definition at line 119 of file `IXMoptions.f90`.

References `IXFset_options()`, and `NXUmodule::status`.

Here is the call graph for this function:



#### 5.54.1.3 subroutine `IXMoptions::IXFdestroy_options` (`type(IXToptions)` *opt*, `type(IXTstatus)` *status*)

Definition at line 111 of file `IXMoptions.f90`.

**5.54.1.4** subroutine `IXMoptions::IXFget_options` (`type(IXToptions)`,`intent(inout)` *opt*, `type(IXTstatus)` *status*, `logical,intent(out)`,`optional bgrd`, `logical,intent(out)`,`optional m_units`, `logical,intent(out)`,`optional m_rebin`, `logical,intent(out)`,`optional d_units`, `logical,intent(out)`,`optional d_rebin`, `type(IXToptions)`,`intent(out)`,`optional wout`)

Definition at line 89 of file `IXMoptions.f90`.

References `NXUmodule::status`.

**5.54.1.5** subroutine `IXMoptions::IXFoperation_run_options` (`type(IXToperation)` *op*, `character(len=*)` *field*, `type(IXToptions)` *arg*, `type(IXTstatus)` *status*)

Definition at line 34 of file `IXMoptions.f90`.

References `NXUmodule::status`.

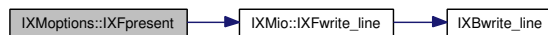
**5.54.1.6** logical `IXMoptions::IXFpresent` (`type(IXToptions)`,`intent(in)`,`optional opt`, `real(dp)`,`dimension(2)`,`intent(in)`,`optional bgrd`, `type(IXTunits)`,`intent(in)`,`optional m_units`, `real(dp)`,`dimension(:)`,`intent(in)`,`optional m_rebin`, `type(IXTunits)`,`intent(in)`,`optional d_units`, `real(dp)`,`dimension(:)`,`intent(in)`,`optional d_rebin`)

Definition at line 132 of file `IXMoptions.f90`.

References `IXMio::IXFwrite_line()`, and `NXUmodule::status`.

Referenced by `IXMdata::IXFpopulate_data_dso()`, `IXMrunfile::IXFpopulate_det_runfile()`, `IXMrunfile::IXFpopulate_mon_runfile()`, and `IXMrunfile::IXFpopulate_runfile()`.

Here is the call graph for this function:



**5.54.1.7** subroutine `IXMoptions::IXFset_options` (`type(IXToptions)`,`intent(inout)` *opt*, `type(IXTstatus)` *status*, `logical,intent(in)`,`optional bgrd`, `logical,intent(in)`,`optional m_units`, `logical,intent(in)`,`optional m_rebin`, `logical,intent(in)`,`optional d_units`, `logical,intent(in)`,`optional d_rebin`, `type(IXToptions)`,`intent(in)`,`optional ref`)

Definition at line 52 of file `IXMoptions.f90`.

References `IXFcheck_options()`, and `NXUmodule::status`.

Referenced by `IXFcreate_options()`.

Here is the call graph for this function:



## 5.55 IXMorientation Namespace Reference

### Classes

- struct **IXTorientation**
- interface operator
- interface **IXFsetgen\_orientation**
- interface **IXFcreate**

### Functions

- subroutine **IXFdestroy\_orientation** (*arg*, *status*)
- subroutine **IXFoperation\_run\_orientation** (*op*, *field*, *arg*, *status*)
- subroutine **IXFset\_class\_orientation** (*self*, *orientation*)
- subroutine **IXFset\_attributes\_orientation** (*self*, *status*, *rotmat*)
- subroutine **IXFset\_orientation** (*orientation*, *status*, *base*, *rotmat*, *rotvec*, *ref*)
- subroutine **IXFget\_orientation** (*orientation*, *status*, *base*, *rotmat*, *rotvec*, *wout*)
- subroutine **IXFset\_rotvec\_orientation** (*self*, *status*, *rotvec*)
- subroutine **IXFget\_class\_orientation** (*self*, *orientation*)
- subroutine **IXFget\_attributes\_orientation** (*self*, *status*, *rotmat*)
- subroutine **IXFget\_rotvec\_orientation** (*self*, *status*, *rotvec*)
- subroutine **IXFcreate\_class\_orientation** (*self*, *orientation*)
- subroutine **IXFcreate\_orientation** (*self*, *status*, *rotmat*)
- subroutine **IXFcheck\_orientation** (*orientation*, *status*)
- type(**IXTorientation**) **IXFtimes\_op\_orientation** (*or1*, *or2*)
- subroutine **IXFcombine\_orientation** (*or1*, *t1*, *or2*, *t2*, *ores*, *tres*)
- subroutine **IXFdifference\_orientation** (*or1*, *t1*, *or2*, *t2*, *odiff*, *tdiff*)
- real(*dp*), dimension(3) **IXFs2sprime\_orientation** (*or*, *t*, *v*)
- real(*dp*), dimension(3) **IXFsprime2s\_orientation** (*or*, *t*, *vprime*)

### 5.55.1 Function Documentation

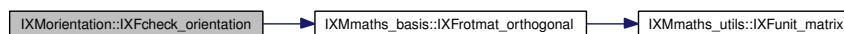
#### 5.55.1.1 subroutine IXMorientation::IXFcheck\_orientation (type(**IXTorientation**) *orientation*, type(**IXTstatus**) *status*)

Definition at line 278 of file IXMorientation.f90.

References **IXMmaths\_basis::IXFrotmat\_orthogonal()**, and **NXUmodule::status**.

Referenced by **IXMgeometry::IXFcheck\_geometry()**, **IXFget\_orientation()**, **IXFset\_attributes\_orientation()**, **IXFset\_orientation()**, and **IXFset\_rotvec\_orientation()**.

Here is the call graph for this function:



**5.55.1.2 subroutine IXMorientation::IXFcombine\_orientation**  
 (type(IXTorientation),intent(in) *or1*, type(IXTtranslation),intent(in) *t1*,  
 type(IXTorientation),intent(in) *or2*, type(IXTtranslation),intent(in) *t2*,  
 type(IXTorientation),intent(out) *ores*, type(IXTtranslation),intent(out)  
*tres*)

Definition at line 306 of file IXMorientation.f90.

References IXMtranslation::IXFmatmul\_translation().

Here is the call graph for this function:



**5.55.1.3 subroutine IXMorientation::IXFcreate\_class\_orientation**  
 (type(IXTorientation),intent(out) *self*, type(IXTorientation),intent(in)  
*orientation*)

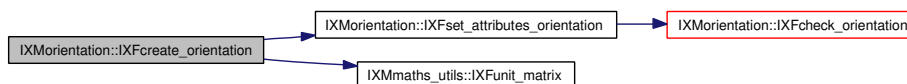
Definition at line 247 of file IXMorientation.f90.

**5.55.1.4 subroutine IXMorientation::IXFcreate\_orientation**  
 (type(IXTorientation),intent(out) *self*, type(IXTstatus) *status*,  
 real(dp),dimension(3,3) ,intent(in),optional *rotmat*)

Definition at line 254 of file IXMorientation.f90.

References IXFset\_attributes\_orientation(), IXMmaths\_utils::IXFunit\_matrix(), and NXUmodule::status.

Here is the call graph for this function:



**5.55.1.5 subroutine IXMorientation::IXFdestroy\_orientation**  
 (type(IXTorientation) *arg*, type(IXTstatus) *status*)

Definition at line 85 of file IXMorientation.f90.

References NXUmodule::status.

**5.55.1.6 subroutine IXMorientation::IXFdifference\_orientation**  
 (type(IXTorientation),intent(in) *or1*, type(IXTtranslation),intent(in) *t1*,  
 type(IXTorientation),intent(in) *or2*, type(IXTtranslation),intent(in) *t2*,  
 type(IXTorientation),intent(out) *odiff*, type(IXTtranslation),intent(out)  
*tdiff*)

Definition at line 321 of file IXMorientation.f90.

References IXMtranslation::IXFmatmul\_translation().

Referenced by IXMgeometry::IXFarea\_vertices\_geometry(), and IXMgeometry::IXFprojarea\_vertices\_geometry().

Here is the call graph for this function:



**5.55.1.7 subroutine IXMorientation::IXFget\_attributes\_orientation**  
 (type(IXTOrientation),intent(in) *self*, type(IXTstatus),intent(inout) *status*,  
 real(dp),dimension(3,3) ,intent(out),optional *rotmat*)

Definition at line 219 of file IXMorientation.f90.

**5.55.1.8 subroutine IXMorientation::IXFget\_class\_orientation**  
 (type(IXTOrientation),intent(in) *self*, type(IXTOrientation),intent(out)  
*orientation*)

Definition at line 212 of file IXMorientation.f90.

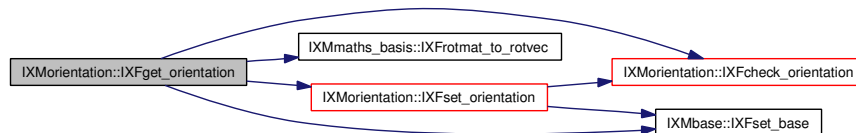
**5.55.1.9 subroutine IXMorientation::IXFget\_orientation**  
 (type(IXTOrientation),intent(inout) *orientation*,  
 type(IXTstatus),intent(inout) *status*, type(IXTbase),intent(out),optional  
*base*, real(dp),dimension(3,3) ,intent(out),optional  
*rotmat*, real(dp),dimension(3) ,intent(out),optional *rotvec*,  
 type(IXTOrientation),intent(out),optional *wout*)

Definition at line 169 of file IXMorientation.f90.

References IXFcheck\_orientation(), IXMmaths\_basis::IXFrotmat\_to\_rotvec(),  
 IXMbase::IXFset\_base(), IXFset\_orientation(), and NXUmodule::status.

Referenced by IXMgeometry::IXFarea\_vertices\_geometry(), and IXMgeometry::IXFprojarea\_vertices\_geometry().

Here is the call graph for this function:



**5.55.1.10 subroutine IXMorientation::IXFget\_rotvec\_orientation**  
 (type(IXTOrientation),intent(in) *self*, type(IXTstatus),intent(inout)  
*status*, real(dp),dimension(3) ,intent(out),optional *rotvec*)

Definition at line 227 of file IXMorientation.f90.

References IXMmaths\_basis::IXFrotmat\_to\_rotvec().

Here is the call graph for this function:



**5.55.1.11** subroutine **IXMorientation::IXFoperation\_run\_orientation**  
 (type(IXToperation) *op*, character(len=\*) *field*, type(IXTorientation)  
*arg*, type(IXTstatus) *status*)

Definition at line 93 of file IXMorientation.f90.

References NXUmodule::status.

**5.55.1.12** real(dp),dimension(3) **IXMorientation::IXFs2sprime\_orientation**  
 (type(IXTorientation),intent(in) *or*, type(IXTtranslation),intent(in) *t*,  
 real(dp),dimension(3),intent(in) *v*)

Definition at line 331 of file IXMorientation.f90.

References IXMtranslation::IXFs2sprime\_translation().

Referenced by IXMgeometry::IXFsolid\_angle\_geometry().

Here is the call graph for this function:



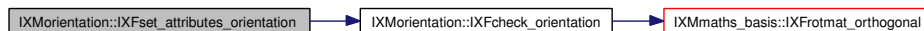
**5.55.1.13** subroutine **IXMorientation::IXFset\_attributes\_orientation**  
 (type(IXTorientation),intent(inout) *self*, type(IXTstatus) *status*,  
 real(dp),dimension(3,3) ,intent(in),optional *rotmat*)

Definition at line 127 of file IXMorientation.f90.

References IXFcheck\_orientation(), and NXUmodule::status.

Referenced by IXFcreate\_orientation().

Here is the call graph for this function:



**5.55.1.14** subroutine **IXMorientation::IXFset\_class\_orientation**  
 (type(IXTorientation),intent(inout) *self*, type(IXTorientation),intent(in)  
*orientation*)

Definition at line 119 of file IXMorientation.f90.

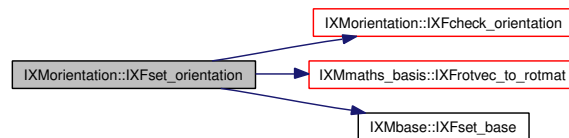
**5.55.1.15** subroutine `IXMorientation::IXFset_orientation`  
 (type(`IXTorientation`),intent(inout) *orientation*,  
 type(`IXTstatus`),intent(inout) *status*, type(`IXTbase`),intent(in),optional  
*base*, real(`dp`),dimension(3,3) ,intent(in),optional  
*rotmat*, real(`dp`),dimension(3) ,intent(in),optional *rotvec*,  
 type(`IXTorientation`),intent(in),optional *ref*)

Definition at line 138 of file `IXMorientation.f90`.

References `IXFcheck_orientation()`, `IXMmaths_basis::IXFrotvec_to_rotmat()`,  
`IXMbase::IXFset_base()`, and `NXUmodule::status`.

Referenced by `IXMgeometry::IXFcreate_attributes_geometry()`, `IXFget_orientation()`, and  
`IXMgeometry::IXFset_geometry()`.

Here is the call graph for this function:

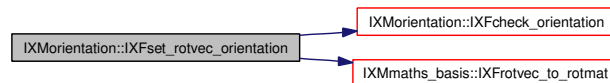


**5.55.1.16** subroutine `IXMorientation::IXFset_rotvec_orientation`  
 (type(`IXTorientation`),intent(inout) *self*, type(`IXTstatus`) *status*,  
 real(`dp`),dimension(3) ,intent(in) *rotvec*)

Definition at line 196 of file `IXMorientation.f90`.

References `IXFcheck_orientation()`, `IXMmaths_basis::IXFrotvec_to_rotmat()`, and `NXUmod-  
 ule::status`.

Here is the call graph for this function:



**5.55.1.17** real(`dp`),dimension(3) `IXMorientation::IXFprime2s_orientation`  
 (type(`IXTorientation`),intent(in) *or*, type(`IXTtranslation`),intent(in) *t*,  
 real(`dp`),dimension(3),intent(in) *vprime*)

Definition at line 340 of file `IXMorientation.f90`.

References `IXMtranslation::IXFprime2s_translation()`.

Here is the call graph for this function:





**5.55.1.18** `type(IXOrientation) IXOrientation::IXFtimes_op_orientation`  
`(type(IXOrientation),intent(in) or1, type(IXOrientation),intent(in)`  
`or2)`

Definition at line 300 of file IXOrientation.f90.

## 5.56 IXMpeaks Namespace Reference

### Classes

- struct `IXTpeaks`

### Functions

- subroutine `IXFoperation_run_peaks` (`op`, `field`, `arg`, `status`)
- subroutine `IXFset_peaks` (`peaks`, `status`, `monitor_no`, `integral`, `irange_low`, `irange_high`, `integral_units`, `moments`, `moments_units`, `ref`)
- subroutine `IXFget_peaks` (`peaks`, `status`, `monitor_no`, `integral`, `irange_low`, `irange_high`, `integral_units`, `moments`, `moments_units`, `wout`)
- subroutine `IXFcheck_peaks` (`peaks`, `status`)
- subroutine `IXFdestroy_peaks` (`peaks`, `status`)
- subroutine `IXFcreate_peaks` (`peaks`, `monitor_no`, `integral`, `irange_low`, `irange_high`, `integral_units`, `moments`, `moments_units`, `status`)
- subroutine `IXFget_ptr_peaks` (`peaks`, `monitor_no`, `irange_low`, `irange_high`)
- subroutine `IXFget_alloc_peaks` (`peaks`, `status`, `monitor_no`, `integral`, `irange_low`, `irange_high`, `integral_units`, `moments`, `moments_units`, `wout`)

### 5.56.1 Function Documentation

#### 5.56.1.1 subroutine `IXMpeaks::IXFcheck_peaks` (`type(IXTpeaks) peaks`, `type(IXTstatus) status`)

Definition at line 154 of file `IXMpeaks.f90`.

References `NXUmodule::status`.

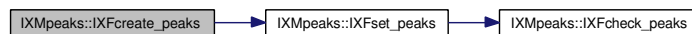
Referenced by `IXFset_peaks()`.

#### 5.56.1.2 subroutine `IXMpeaks::IXFcreate_peaks` (`type(IXTpeaks) peaks`, `integer(i4b),dimension(:) ,intent(in) monitor_no`, `type(IXTdatum_array),intent(in) integral`, `real(dp),dimension(:) ,intent(in) irange_low`, `real(dp),dimension(:) ,intent(in) irange_high`, `character(len=*) ,intent(in) integral_units`, `type(IXTmoments),intent(in) moments`, `character(len=*) ,intent(in) moments_units`, `type(IXTstatus) status`)

Definition at line 193 of file `IXMpeaks.f90`.

References `IXFset_peaks()`, and `NXUmodule::status`.

Here is the call graph for this function:



### 5.56.1.3 subroutine IXMpeaks::IXFdestroy\_peaks (type(IXTpeaks) *peaks*, type(IXTstatus) *status*)

Definition at line 171 of file IXMpeaks.f90.

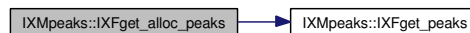
References NXUmodule::status.

### 5.56.1.4 subroutine IXMpeaks::IXFget\_alloc\_peaks (type(IXTpeaks),intent(in) *peaks*, type(IXTstatus) *status*, integer(i4b),dimension(:),optional,allocatable *monitor\_no*, type(IXTdatum\_array),intent(out),optional *integral*, real(dp),dimension(:),optional,allocatable *irange\_low*, real(dp),dimension(:),optional,allocatable *irange\_high*, character(len=\*),intent(out),optional *integral\_units*, type(IXTmoments),intent(out),optional *moments*, character(len=\*),intent(out),optional *moments\_units*, type(IXTpeaks),intent(out),optional *wout*)

Definition at line 250 of file IXMpeaks.f90.

References IXFget\_peaks(), and NXUmodule::status.

Here is the call graph for this function:



### 5.56.1.5 subroutine IXMpeaks::IXFget\_peaks (type(IXTpeaks),intent(in) *peaks*, type(IXTstatus) *status*, integer(i4b),dimension(:),intent(out),optional *monitor\_no*, type(IXTdatum\_array),intent(out),optional *integral*, real(dp),dimension(:),intent(out),optional *irange\_low*, real(dp),dimension(:),intent(out),optional *irange\_high*, character(len=\*),intent(out),optional *integral\_units*, type(IXTmoments),intent(out),optional *moments*, character(len=\*),intent(out),optional *moments\_units*, type(IXTpeaks),intent(out),optional *wout*)

Definition at line 122 of file IXMpeaks.f90.

References NXUmodule::status.

Referenced by IXFget\_alloc\_peaks().

### 5.56.1.6 subroutine IXMpeaks::IXFget\_ptr\_peaks (type(IXTpeaks),intent(in) *peaks*, integer(i4b),dimension(:),optional,pointer *monitor\_no*, real(dp),dimension(:),optional,pointer *irange\_low*, real(dp),dimension(:),optional,pointer *irange\_high*)

Definition at line 234 of file IXMpeaks.f90.

### 5.56.1.7 subroutine IXMpeaks::IXFoperation\_run\_peaks (type(IXToperation) *op*, character(len=\*) *field*, type(IXTpeaks) *arg*, type(IXTstatus) *status*)

Definition at line 38 of file IXMpeaks.f90.

References NXUmodule::status.

**5.56.1.8** subroutine IXMpeaks::IXFset\_peaks (type(IXTpeaks),intent(inout) *peaks*, type(IXTstatus) *status*, integer(i4b),dimension(:),intent(in),optional *monitor\_no*, type(IXTdatum\_array),intent(in),optional *integral*, real(dp),dimension(:),intent(in),optional *irange\_low*, real(dp),dimension(:),intent(in),optional *irange\_high*, character(len=\*),intent(in),optional *integral\_units*, type(IXTmoments),intent(in),optional *moments*, character(len=\*),intent(in),optional *moments\_units*, type(IXTpeaks),intent(in),optional *ref*)

Definition at line 66 of file IXMpeaks.f90.

References IXFcheck\_peaks(), and NXUmodule::status.

Referenced by IXFcreate\_peaks().

Here is the call graph for this function:



## 5.57 IXMphysical\_constants Namespace Reference

### Variables

- `real(dp)`, parameter `neutron_mass = 1.67492716e-27_dp`
- `real(dp)`, parameter `neutron_mass_mantissa = 1.67492716_dp`
- `real(dp)`, parameter `hbar = 1.054571596e-34_dp`
- `real(dp)`, parameter `hbar_mantissa = 1.054571596_dp`
- `real(dp)`, parameter `electron_charge = 1.602176462e-19_dp`
- `real(dp)`, parameter `electron_charge_mantissa = 1.602176462_dp`
- `real(dp)`, parameter `speed_of_light = 2.99792458e8_dp`
- `real(dp)`, parameter `speed_of_light_mantissa = 2.99792458_dp`

### 5.57.1 Variable Documentation

**5.57.1.1** `real(dp)`,parameter `IXMphysical_constants::electron_charge = 1.602176462e-19_dp`

Definition at line 14 of file `IXMphysical_constants.f90`.

**5.57.1.2** `real(dp)`,parameter `IXMphysical_constants::electron_charge_mantissa = 1.602176462_dp`

Definition at line 15 of file `IXMphysical_constants.f90`.

**5.57.1.3** `real(dp)`,parameter `IXMphysical_constants::hbar = 1.054571596e-34_dp`

Definition at line 12 of file `IXMphysical_constants.f90`.

**5.57.1.4** `real(dp)`,parameter `IXMphysical_constants::hbar_mantissa = 1.054571596_dp`

Definition at line 13 of file `IXMphysical_constants.f90`.

**5.57.1.5** `real(dp)`,parameter `IXMphysical_constants::neutron_mass = 1.67492716e-27_dp`

Definition at line 10 of file `IXMphysical_constants.f90`.

**5.57.1.6** `real(dp)`,parameter `IXMphysical_constants::neutron_mass_mantissa = 1.67492716_dp`

Definition at line 11 of file `IXMphysical_constants.f90`.

**5.57.1.7** `real(dp)`,parameter `IXMphysical_constants::speed_of_light = 2.99792458e8_dp`

Definition at line 16 of file `IXMphysical_constants.f90`.

**5.57.1.8** `real(dp),parameter IXMphysical_constants::speed_of_light_mantissa = 2.99792458_dp`

Definition at line 17 of file IXMphysical\_constants.f90.

## 5.58 IXMpointer\_to\_array Namespace Reference

### Classes

- struct IXTpointer\_to\_array

## 5.59 IXMrebin Namespace Reference

### Functions

- subroutine `IXFrebin_1d_hist` (`xin`, `s_in`, `ein`, `xout`, `s_out`, `eout`, `xdist`, `status`)
- subroutine `IXFrebinX_2d_hist` (`x_in`, `s_in`, `e_in`, `x_out`, `s_out`, `e_out`, `xdist`, `status`)
- subroutine `IXFrebinY_2d_hist` (`yin`, `s_in`, `e_in`, `yout`, `s_out`, `e_out`, `ydist`, `status`)
- subroutine `IXFrebin_1d_hist_get_arr` (`xbounds`, `x_in`, `n_out`, `x_out`, `status`)
- subroutine `IXFrebin_points` (`px_in`, `xin`, `s_in`, `ein`, `xout`, `s_out`, `eout`, `status`)

### 5.59.1 Function Documentation

**5.59.1.1** subroutine `IXMrebin::IXFrebin_1d_hist` (`real(dp),dimension(:),intent(in) xin`, `real(dp),dimension(:),intent(in) s_in`, `real(dp),dimension(:),intent(in) ein`, `real(dp),dimension(:),intent(out) xout`, `real(dp),dimension(:),intent(out) s_out`, `real(dp),dimension(:),intent(out) eout`, `logical,intent(in) xdist`, `type(IXTstatus) status`)

Definition at line 8 of file `IXMrebin.f90`.

References `IXMstatus::IXCseverity_error`, and `NXUmodule::status`.

Referenced by `IXMdataset_1d::IXFrebin_dataset_1d()`, and `IXFrebin_points()`.

**5.59.1.2** subroutine `IXMrebin::IXFrebin_1d_hist_get_arr` (`real(dp),dimension(:),intent(in) xbounds`, `real(dp),dimension(:),intent(in),optional x_in`, `integer(i4b),intent(out),optional n_out`, `real(dp),dimension(:),intent(out),optional x_out`, `type(IXTstatus) status`)

Definition at line 364 of file `IXMrebin.f90`.

References `IXMstatus::IXCseverity_error`, and `NXUmodule::status`.

Referenced by `IXMdataset_1d::IXFrebin_dataset_1d()`, `IXMdataset_2d::IXFrebin_x_dataset_2d()`, `IXMdataset_2d::IXFrebin_xy_dataset_2d()`, and `IXMdataset_2d::IXFrebin_y_dataset_2d()`.

**5.59.1.3** subroutine `IXMrebin::IXFrebin_points` (`real(dp),dimension(:),intent(in) px_in`, `real(dp),dimension(:),intent(in) xin`, `real(dp),dimension(:),intent(in) s_in`, `real(dp),dimension(:),intent(in) ein`, `real(dp),dimension(:),intent(out) xout`, `real(dp),dimension(:),intent(out) s_out`, `real(dp),dimension(:),intent(out) eout`, `type(IXTstatus) status`)

Definition at line 566 of file `IXMrebin.f90`.

References `IXMstatus::IXCseverity_error`, `IXFrebin_1d_hist()`, and `NXUmodule::status`.

Here is the call graph for this function:





**5.59.1.4** subroutine IXMrebin::IXFrebinX\_2d\_hist (real(dp),dimension(:),intent(in) *x\_in*, real(dp),dimension(:,:),intent(in) *e\_in*, real(dp),dimension(:),intent(out) *x\_out*, real(dp),dimension(:,:),intent(out) *s\_out*, real(dp),dimension(:,:),intent(out) *e\_out*, logical,intent(in) *xdist*, type(IXTstatus) *status*)

Definition at line 118 of file IXMrebin.f90.

References IXMstatus::IXCseverity\_error, and NXUmodule::status.

Referenced by IXMdataset\_2d::IXFrebin\_x\_dataset\_2d(), and IXMdataset\_2d::IXFrebin\_xy\_dataset\_2d().

**5.59.1.5** subroutine IXMrebin::IXFrebinY\_2d\_hist (real(dp),dimension(:),intent(in) *yin*, real(dp),dimension(:,:),intent(in) *s\_in*, real(dp),dimension(:,:),intent(in) *e\_in*, real(dp),dimension(:),intent(out) *yout*, real(dp),dimension(:,:),intent(out) *s\_out*, real(dp),dimension(:,:),intent(out) *e\_out*, logical,intent(in) *ydist*, type(IXTstatus) *status*)

Definition at line 242 of file IXMrebin.f90.

References IXMstatus::IXCseverity\_error, and NXUmodule::status.

Referenced by IXMdataset\_2d::IXFrebin\_xy\_dataset\_2d(), and IXMdataset\_2d::IXFrebin\_y\_dataset\_2d().

## 5.60 IXMrebunch Namespace Reference

### Functions

- subroutine IXFrebunchHist (*x*, *s*, *e*, *x\_new*, *s\_new*, *e\_new*, *xdist*, *nbunch*, *status*)
- subroutine IXFrebunchPoints (*x*, *s*, *e*, *x\_new*, *s\_new*, *e\_new*, *nbunch*, *status*)
- subroutine IXFrebunch\_hist (*nbunch*, *ntotal*, *s*, *x*, *e*, *x\_new*, *s\_new*, *e\_new*, *xdist*)
- subroutine IXFrebunch\_points (*nbunch*, *ntotal*, *s\_in*, *x\_in*, *e\_in*, *s\_out*, *x\_out*, *e\_out*)
- subroutine IXFrebunchHistX (*x*, *s*, *e*, *x\_new*, *s\_new*, *e\_new*, *xdist*, *nbunch*, *status*)
- subroutine IXFrebunch\_histX\_2d (*nbunch*, *ntotal*, *s*, *x*, *e*, *x\_new*, *s\_new*, *e\_new*, *xdist*)
- subroutine IXFrebunchHistY (*y*, *s*, *e*, *y\_new*, *s\_new*, *e\_new*, *ydist*, *nbunch*, *status*)
- subroutine IXFrebunch\_histY\_2d (*nbunch*, *ntotal*, *s*, *y*, *e*, *y\_new*, *s\_new*, *e\_new*, *ydist*)
- subroutine IXFrebunchXY (*x*, *y*, *s*, *e*, *x\_new*, *y\_new*, *s\_new*, *e\_new*, *xdist*, *ydist*, *xhist*, *yhist*, *Xbunch*, *Ybunch*, *status*)
- subroutine IXFrebunchPointsX (*x*, *s*, *e*, *x\_new*, *s\_new*, *e\_new*, *nbunch*, *status*)
- subroutine IXFrebunchPointsY (*y*, *s*, *e*, *y\_new*, *s\_new*, *e\_new*, *nbunch*, *status*)
- subroutine IXFrebunch\_pointsX (*nbunch*, *ntotal*, *s\_in*, *x\_in*, *e\_in*, *s\_out*, *x\_out*, *e\_out*)
- subroutine IXFrebunch\_pointsY (*nbunch*, *ntotal*, *s\_in*, *y\_in*, *e\_in*, *s\_out*, *y\_out*, *e\_out*)

### 5.60.1 Function Documentation

**5.60.1.1** subroutine IXMrebunch::IXFrebunch\_hist (integer(i4b),intent(in) *nbunch*, integer(i4b),intent(inout) *ntotal*, real(dp),dimension(:),intent(in) *s*, real(dp),dimension(:),intent(in),optional *x*, real(dp),dimension(:),intent(in),optional *e*, real(dp),dimension(:),intent(inout),optional *x\_new*, real(dp),dimension(:),intent(inout),optional *s\_new*, real(dp),dimension(:),intent(inout),optional *e\_new*, logical,intent(in),optional *xdist*)

Definition at line 56 of file IXMrebunch.f90.

Referenced by IXFrebunchHist().

**5.60.1.2** subroutine IXMrebunch::IXFrebunch\_histX\_2d (integer(i4b),intent(in) *nbunch*, integer(i4b),intent(inout) *ntotal*, real(dp),dimension(:,:),intent(in) *s*, real(dp),dimension(:),intent(in),optional *x*, real(dp),dimension(:,:),intent(in),optional *e*, real(dp),dimension(:),intent(inout),optional *x\_new*, real(dp),dimension(:,:),intent(inout),optional *s\_new*, real(dp),dimension(:,:),intent(inout),optional *e\_new*, logical,intent(in),optional *xdist*)

Definition at line 208 of file IXMrebunch.f90.

Referenced by IXFrebunchHistX(), and IXFrebunchXY().

**5.60.1.3** subroutine IXMrebunch::IXFrebunch\_histY\_2d (integer(i4b),intent(in) *nbunch*, integer(i4b),intent(inout) *ntotal*, real(dp),dimension(:,:),intent(in) *s*, real(dp),dimension(:),intent(in),optional *y*, real(dp),dimension(:,:),intent(in),optional *e*, real(dp),dimension(:),intent(inout),optional *y\_new*, real(dp),dimension(:,:),intent(inout),optional *s\_new*, real(dp),dimension(:,:),intent(inout),optional *e\_new*, logical,intent(in),optional *ydist*)

Definition at line 312 of file IXMrebunch.f90.

Referenced by IXFrebunchHistY(), and IXFrebunchXY().

**5.60.1.4** subroutine IXMrebunch::IXFrebunch\_points (integer(i4b),intent(in) *nbunch*, integer(i4b),intent(inout) *ntotal*, real(dp),dimension(:),intent(in) *s\_in*, real(dp),dimension(:),intent(in),optional *x\_in*, real(dp),dimension(:),intent(in),optional *e\_in*, real(dp),dimension(:),intent(out),optional *s\_out*, real(dp),dimension(:),intent(out),optional *x\_out*, real(dp),dimension(:),intent(out),optional *e\_out*)

Definition at line 133 of file IXMrebunch.f90.

Referenced by IXFrebunchPoints().

**5.60.1.5** subroutine IXMrebunch::IXFrebunch\_pointsX (integer(i4b),intent(in) *nbunch*, integer(i4b),intent(inout) *ntotal*, real(dp),dimension(:,:),intent(in) *s\_in*, real(dp),dimension(:),intent(in),optional *x\_in*, real(dp),dimension(:,:),intent(in),optional *e\_in*, real(dp),dimension(:,:),intent(out),optional *s\_out*, real(dp),dimension(:),intent(out),optional *x\_out*, real(dp),dimension(:,:),intent(out),optional *e\_out*)

Definition at line 505 of file IXMrebunch.f90.

Referenced by IXFrebunchPointsX(), and IXFrebunchXY().

**5.60.1.6** subroutine IXMrebunch::IXFrebunch\_pointsY (integer(i4b),intent(in) *nbunch*, integer(i4b),intent(inout) *ntotal*, real(dp),dimension(:,:),intent(in) *s\_in*, real(dp),dimension(:),intent(in),optional *y\_in*, real(dp),dimension(:,:),intent(in),optional *e\_in*, real(dp),dimension(:,:),intent(out),optional *s\_out*, real(dp),dimension(:),intent(out),optional *y\_out*, real(dp),dimension(:,:),intent(out),optional *e\_out*)

Definition at line 554 of file IXMrebunch.f90.

Referenced by IXFrebunchPointsY(), and IXFrebunchXY().

**5.60.1.7** subroutine `IXMrebunch::IXFrebunchHist` (`real(dp),dimension(:),intent(in) x`, `real(dp),dimension(:),intent(in) s`, `real(dp),dimension(:),intent(in) e`, `real(dp),dimension(:),pointer x_new`, `real(dp),dimension(:),pointer s_new`, `real(dp),dimension(:),pointer e_new`, `logical,intent(in) xdist`, `integer(i4b),intent(in) nbunch`, `type(IXTstatus),intent(inout) status`)

Definition at line 6 of file `IXMrebunch.f90`.

References `IXFrebunch_hist()`, and `NXUmodule::status`.

Referenced by `IXMdataset_1d::IXFrebunch_dataset_1d()`.

Here is the call graph for this function:



**5.60.1.8** subroutine `IXMrebunch::IXFrebunchHistX` (`real(dp),dimension(:),intent(in) x`, `real(dp),dimension(:,,:),intent(in) s`, `real(dp),dimension(:,,:),intent(in) e`, `real(dp),dimension(:),pointer x_new`, `real(dp),dimension(:,,:),pointer s_new`, `real(dp),dimension(:,,:),pointer e_new`, `logical,intent(in) xdist`, `integer(i4b),intent(in) nbunch`, `type(IXTstatus),intent(inout) status`)

Definition at line 181 of file `IXMrebunch.f90`.

References `IXFrebunch_histX_2d()`, and `NXUmodule::status`.

Referenced by `IXMdataset_2d::IXFrebunch_x_dataset_2d()`.

Here is the call graph for this function:



**5.60.1.9** subroutine `IXMrebunch::IXFrebunchHistY` (`real(dp),dimension(:),intent(in) y`, `real(dp),dimension(:,,:),intent(in) s`, `real(dp),dimension(:,,:),intent(in) e`, `real(dp),dimension(:),pointer y_new`, `real(dp),dimension(:,,:),pointer s_new`, `real(dp),dimension(:,,:),pointer e_new`, `logical,intent(in) ydist`, `integer(i4b),intent(in) nbunch`, `type(IXTstatus),intent(inout) status`)

Definition at line 285 of file `IXMrebunch.f90`.

References `IXFrebunch_histY_2d()`, and `NXUmodule::status`.

Referenced by `IXMdataset_2d::IXFrebunch_y_dataset_2d()`.

Here is the call graph for this function:



**5.60.1.10 subroutine IXMrebunch::IXFrebunchPoints**  
 (real(dp),dimension(:),intent(in) *x*, real(dp),dimension(:),intent(in) *s*,  
 real(dp),dimension(:),intent(in) *e*, real(dp),dimension(:),pointer *x\_new*,  
 real(dp),dimension(:),pointer *s\_new*, real(dp),dimension(:),pointer  
*e\_new*, integer(i4b),intent(in) *nbunch*, type(IXTstatus),intent(inout)  
*status*)

Definition at line 31 of file IXMrebunch.f90.

References IXFrebunch\_points(), and NXUmodule::status.

Referenced by IXMdataset\_1d::IXFrebunch\_dataset\_1d().

Here is the call graph for this function:



**5.60.1.11 subroutine IXMrebunch::IXFrebunchPointsX**  
 (real(dp),dimension(:),intent(in) *x*, real(dp),dimension(:,,:),intent(in) *s*,  
 real(dp),dimension(:,,:),intent(in) *e*, real(dp),dimension(:),pointer *x\_new*,  
 real(dp),dimension(:,,:),pointer *s\_new*, real(dp),dimension(:,,:),pointer  
*e\_new*, integer(i4b),intent(in) *nbunch*, type(IXTstatus),intent(inout)  
*status*)

Definition at line 454 of file IXMrebunch.f90.

References IXFrebunch\_pointsX(), and NXUmodule::status.

Referenced by IXMdataset\_2d::IXFrebunch\_x\_dataset\_2d().

Here is the call graph for this function:



**5.60.1.12 subroutine IXMrebunch::IXFrebunchPointsY**  
 (real(dp),dimension(:),intent(in) *y*, real(dp),dimension(:,,:),intent(in) *s*,  
 real(dp),dimension(:,,:),intent(in) *e*, real(dp),dimension(:),pointer *y\_new*,  
 real(dp),dimension(:,,:),pointer *s\_new*, real(dp),dimension(:,,:),pointer  
*e\_new*, integer(i4b),intent(in) *nbunch*, type(IXTstatus),intent(inout)  
*status*)

Definition at line 478 of file IXMrebunch.f90.

References IXFrebunch\_pointsY(), and NXUmodule::status.

Referenced by IXMdataset\_2d::IXFrebunch\_y\_dataset\_2d().

Here is the call graph for this function:



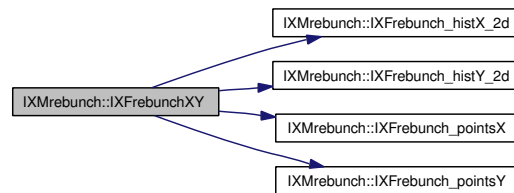
**5.60.1.13** subroutine `IXMrebunch::IXFrebunchXY` (`real(dp),dimension(:),intent(in) x`, `real(dp),dimension(:),intent(in) y`, `real(dp),dimension(:,:),intent(in) s`, `real(dp),dimension(:,:),intent(in) e`, `real(dp),dimension(:),pointer x_new`, `real(dp),dimension(:),pointer y_new`, `real(dp),dimension(:,:),pointer s_new`, `real(dp),dimension(:,:),pointer e_new`, `logical,intent(in) xdist`, `logical,intent(in) ydist`, `logical,intent(in) xhist`, `logical,intent(in) yhist`, `integer(i4b),intent(in) Xbunch`, `integer(i4b),intent(in) Ybunch`, `type(IXTstatus),intent(inout) status`)

Definition at line 389 of file `IXMrebunch.f90`.

References `IXFrebunch_histX_2d()`, `IXFrebunch_histY_2d()`, `IXFrebunch_pointsX()`, `IXFrebunch_pointsY()`, and `NXUmodule::status`.

Referenced by `IXMdataset_2d::IXFrebunch_xy_dataset_2d()`.

Here is the call graph for this function:



## 5.61 IXMregroup Namespace Reference

### Functions

- subroutine `IXFregroup_1d_hist` (`xmin`, `delta`, `xmax`, `xdist`, `xin`, `yin`, `ein`, `xout`, `yout`, `eout`, `nout`, `status`)
- subroutine `IXFregroupX_2d_hist` (`xmin`, `delta`, `xmax`, `xdist`, `x_in`, `s_in`, `e_in`, `x_out`, `s_out`, `e_out`, `nout`, `status`)
- subroutine `IXFregroupY_2d_hist` (`ymin`, `delta`, `ymax`, `ydist`, `y_in`, `s_in`, `e_in`, `y_out`, `s_out`, `e_out`, `nout`, `status`)

### 5.61.1 Function Documentation

**5.61.1.1** subroutine `IXMregroup::IXFregroup_1d_hist` (`real(dp)`,`intent(in)` *xmin*, `real(dp)`,`intent(in)` *delta*, `real(dp)`,`intent(in)` *xmax*, `logical`,`intent(in)` *xdist*, `real(dp)`,`dimension(:)`,`intent(in)` *xin*, `real(dp)`,`dimension(:)`,`intent(in)`,`optional` *yin*, `real(dp)`,`dimension(:)`,`intent(in)`,`optional` *ein*, `real(dp)`,`dimension(:)`,`intent(out)`,`optional` *xout*, `real(dp)`,`dimension(:)`,`intent(out)`,`optional` *yout*, `real(dp)`,`dimension(:)`,`intent(out)`,`optional` *eout*, `integer(i4b)`,`intent(out)`,`optional` *nout*, `type(IXTstatus)` *status*)

Definition at line 8 of file `IXMregroup.f90`.

References `IXMstatus::IXCseverity_error`, and `NXUmodule::status`.

Referenced by `IXMdataset_2d::IXFmoments_dataset_2d()`, `IXMdataset_1d::IXFregroup_dataset_1d()`, `IXMdataset_2d::IXFregroup_x_dataset_2d()`, `IXMdataset_2d::IXFregroup_xy_dataset_2d()`, `IXMdataset_2d::IXFregroup_y_dataset_2d()`, `IXFregroupX_2d_hist()`, and `IXFregroupY_2d_hist()`.

**5.61.1.2** subroutine `IXMregroup::IXFregroupX_2d_hist` (`real(dp)`,`intent(in)` *xmin*, `real(dp)`,`intent(in)` *delta*, `real(dp)`,`intent(in)` *xmax*, `logical`,`intent(in)` *xdist*, `real(dp)`,`dimension(:)`,`intent(in)` *x\_in*, `real(dp)`,`dimension(:,:)`,`intent(in)`,`optional` *s\_in*, `real(dp)`,`dimension(:,:)`,`intent(in)`,`optional` *e\_in*, `real(dp)`,`dimension(:)`,`intent(out)`,`optional` *x\_out*, `real(dp)`,`dimension(:,:)`,`intent(out)`,`optional` *s\_out*, `real(dp)`,`dimension(:,:)`,`intent(out)`,`optional` *e\_out*, `integer(i4b)`,`intent(out)`,`optional` *nout*, `type(IXTstatus)` *status*)

Definition at line 227 of file `IXMregroup.f90`.

References `IXMstatus::IXCseverity_error`, `IXFregroup_1d_hist()`, and `NXUmodule::status`.

Referenced by `IXMdataset_2d::IXFregroup_x_dataset_2d()`, and `IXMdataset_2d::IXFregroup_xy_dataset_2d()`.

Here is the call graph for this function:



**5.61.1.3** subroutine `IXMregroup::IXFregroupY_2d_hist` (`real(dp),intent(in) ymin`, `real(dp),intent(in) delta`, `real(dp),intent(in) ymax`, `logical,intent(in) ydist`, `real(dp),dimension(:),intent(in) y_in`, `real(dp),dimension(:,,:),intent(in),optional s_in`, `real(dp),dimension(:,,:),intent(in),optional e_in`, `real(dp),dimension(:),intent(out),optional y_out`, `real(dp),dimension(:,,:),intent(out),optional s_out`, `real(dp),dimension(:,,:),intent(out),optional e_out`, `integer(i4b),intent(out),optional nout`, `type(IXTstatus) status`)

Definition at line 445 of file `IXMregroup.f90`.

References `IXMstatus::IXCseverity_error`, `IXFregroup_1d_hist()`, and `NXUmodule::status`.

Referenced by `IXMdataset_2d::IXFregroup_xy_dataset_2d()`, and `IXMdataset_2d::IXFregroup_y_dataset_2d()`.

Here is the call graph for this function:





## 5.62 IXMrunfile Namespace Reference

### Classes

- struct `IXTrunfile`
- interface `IXFunits_runfile`

### Functions

- subroutine `IXFoperation_run_runfile` (op, field, arg, status)
- subroutine `IXFget_runfile` (runfile, status, title, users, sample, inst, det\_data, mon\_data, peaks, wout)
- subroutine `IXFgetmondata_runfile` (runfile, data2d, status)
- subroutine `IXFgetdetdata_runfile` (runfile, data2d, status)
- subroutine `IXFgeteival_runfile` (runfile, eival, status)
- subroutine `IXFset_runfile` (runfile, status, title, users, sample, inst, det\_data, mon\_data, peaks, ref)
- subroutine `IXFdestroy_runfile` (runfile, status)
- subroutine `IXFcreate_runfile` (runfile, title, users, sample, inst, det\_data, mon\_data, peaks, status)
- subroutine `IXFcheck_runfile` (runfile, status)
- subroutine `IXFpopulate_mon_runfile` (runfile, status, dso, period, m\_units, m\_rebin, opt)
- subroutine `IXFpopulate_det_runfile` (runfile, status, dso, period, d\_units, d\_rebin, bgrd, opt)
- subroutine `units_runfile` (runfile, status, units\_out)
- subroutine `units_rebinXdesc_runfile` (runfile, status, units\_out, Xdesc)
- subroutine `units_rebinXref_runfile` (runfile, status, units\_out, Xref)
- subroutine `IXFrebin_runfile` (runfile, status, Xdesc, Xref)
- subroutine `IXFbackground_runfile` (runfile, bmin, bmax, status)
- subroutine `IXFcompare_runfile` (rfile1, rfile2, ident, status)
- subroutine `IXFremap_runfile` (runfile, dso, status)
- subroutine `IXFgetei_runfile` (runfile, Ei, status)
- subroutine `IXFsolid_runfile` (rf, dso, wbrf, status)
- logical `IXFwhitecompare_runfile` (sample, whitebeam)
- subroutine `IXFmon_norm_runfile` (rf, wk\_ind, limits, scale, status)
- subroutine `IXFpeak_norm_runfile` (rf, wk\_ind, ei, scale, status)
- subroutine `IXFcharge_norm_runfile` (rf, scale, status)
- subroutine `IXFeffic_norm_runfile` (rf, status)
- subroutine `IXFpopulate_runfile` (runfile, status, dso, period, m\_units, m\_rebin, d\_units, d\_rebin, bgrd, opt)
- subroutine `loadmonmap` (mon\_map, dso, rawfile, status)
- subroutine `loaddetmap` (det\_map, dso, rawfile, status)
- subroutine `loadmask` (mask, dso, masktype, status)
- subroutine `loadrawfile` (rawfile, dso, status)
- subroutine `loadheaderinfo_isis` (rfile, dso, inputsource, status)

### Variables

- integer(i4b), parameter `IXCcomline_initlength = 5`

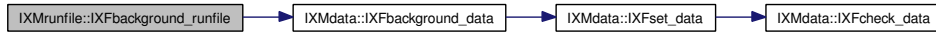
## 5.62.1 Function Documentation

### 5.62.1.1 subroutine IXMrunfile::IXFbackground\_runfile (type(IXTrunfile) *runfile*, real(dp),intent(in) *bmin*, real(dp),intent(in) *bmax*, type(IXTstatus) *status*)

Definition at line 488 of file IXMrunfile.f90.

References IXMdata::IXFbackground\_data(), and NXUmodule::status.

Here is the call graph for this function:



### 5.62.1.2 subroutine IXMrunfile::IXFcharge\_norm\_runfile (type(IXTrunfile) *rf*, real(dp),intent(in) *scale*, type(IXTstatus) *status*)

Definition at line 734 of file IXMrunfile.f90.

References IXMdata::IXFget\_ptr\_data(), and NXUmodule::status.

Here is the call graph for this function:



### 5.62.1.3 subroutine IXMrunfile::IXFcheck\_runfile (type(IXTrunfile) *runfile*, type(IXTstatus) *status*)

Definition at line 319 of file IXMrunfile.f90.

References NXUmodule::status.

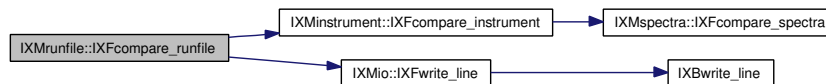
Referenced by IXFset\_runfile().

### 5.62.1.4 subroutine IXMrunfile::IXFcompare\_runfile (type(IXTrunfile),intent(in) *rfile1*, type(IXTrunfile),intent(in) *rfile2*, logical *ident*, type(IXTstatus) *status*)

Definition at line 498 of file IXMrunfile.f90.

References IXMinstrument::IXFcompare\_instrument(), IXMio::IXFwrite\_line(), and NXUmodule::status.

Here is the call graph for this function:

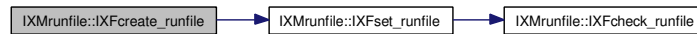


**5.62.1.5** subroutine IXMrunfile::IXFcreate\_runfile (type(IXTrunfile) *runfile*, character(len=\*) ,intent(in) *title*, type(IXTuser),dimension(:),intent(in) *users*, type(IXTsample),intent(in) *sample*, type(IXTinstrument),intent(in) *inst*, type(IXTdata),intent(in) *det\_data*, type(IXTdata),intent(in) *mon\_data*, type(IXTpeaks),intent(in) *peaks*, type(IXTstatus) *status*)

Definition at line 261 of file IXMrunfile.f90.

References IXFset\_runfile(), and NXUmodule::status.

Here is the call graph for this function:



**5.62.1.6** subroutine IXMrunfile::IXFdestroy\_runfile (type(IXTrunfile) *runfile*, type(IXTstatus) *status*)

Definition at line 239 of file IXMrunfile.f90.

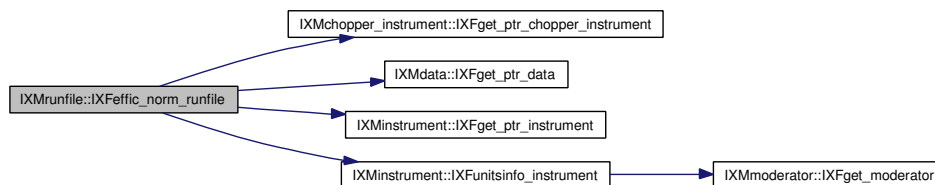
References NXUmodule::status.

**5.62.1.7** subroutine IXMrunfile::IXFeffic\_norm\_runfile (type(IXTrunfile) *rf*, type(IXTstatus) *status*)

Definition at line 762 of file IXMrunfile.f90.

References IXMchopper\_instrument::IXFget\_ptr\_chopper\_instrument(), IXMdata::IXFget\_ptr\_data(), IXMinstrument::IXFget\_ptr\_instrument(), IXMinstrument::IXFunitsinfo\_instrument(), and NXUmodule::status.

Here is the call graph for this function:



**5.62.1.8** subroutine IXMrunfile::IXFget\_runfile (type(IXTrunfile),intent(in) *runfile*, type(IXTstatus) *status*, character(len=\*) ,intent(out),optional *title*, type(IXTuser),dimension(:),intent(out),optional *users*, type(IXTsample),intent(out),optional *sample*, type(IXTinstrument),intent(out),optional *inst*, type(IXTdata),intent(out),optional *det\_data*, type(IXTdata),intent(out),optional *mon\_data*, type(IXTpeaks),intent(out),optional *peaks*, type(IXTrunfile),intent(out),optional *wout*)

Definition at line 89 of file IXMrunfile.f90.

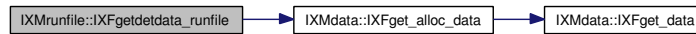
References NXUmodule::status.

**5.62.1.9** subroutine IXMrunfile::IXFgetdetdata\_runfile  
 (type(IXTrunfile),intent(in) *runfile*, type(IXTdataset\_2d),dimension(:),allocatable *data2d*, type(IXTstatus) *status*)

Definition at line 133 of file IXMrunfile.f90.

References IXMdata::IXFget\_alloc\_data(), and NXUmodule::status.

Here is the call graph for this function:

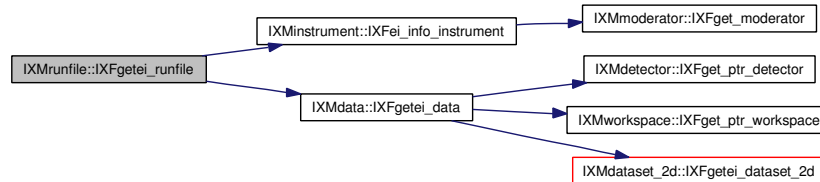


**5.62.1.10** subroutine IXMrunfile::IXFgetei\_runfile (type(IXTrunfile) *runfile*,  
 real(dp) *Ei*, type(IXTstatus) *status*)

Definition at line 548 of file IXMrunfile.f90.

References IXMinstrument::IXFei\_info\_instrument(), IXMdata::IXFgetei\_data(), and NXUmodule::status.

Here is the call graph for this function:



**5.62.1.11** subroutine IXMrunfile::IXFgeteival\_runfile (type(IXTrunfile),intent(in) *runfile*, real(dp),intent(out) *eival*, type(IXTstatus) *status*)

Definition at line 151 of file IXMrunfile.f90.

References IXMchopper\_instrument::IXFget\_ptr\_chopper\_instrument(), IXMinstrument::IXFget\_ptr\_instrument(), and NXUmodule::status.

Here is the call graph for this function:

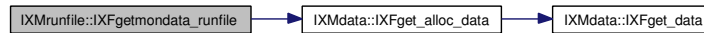


**5.62.1.12** subroutine `IXMrunfile::IXFgetmondata_runfile`  
 (type(`IXTrunfile`),intent(in) *runfile*, type(`IXTdataset_2d`),dimension(:),allocatable *data2d*, type(`IXTstatus`) *status*)

Definition at line 114 of file `IXMrunfile.f90`.

References `IXMdata::IXFget_alloc_data()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.62.1.13** subroutine `IXMrunfile::IXFmon_norm_runfile` (type(`IXTrunfile`) *rf*, integer(`i4b`),intent(in) *wk\_ind*, real(`dp`),dimension(2),intent(in) *limits*, real(`dp`),intent(in) *scale*, type(`IXTstatus`) *status*)

Definition at line 649 of file `IXMrunfile.f90`.

References `IXMdata::IXFget_ptr_data()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.62.1.14** subroutine `IXMrunfile::IXFoperation_run_runfile` (type(`IXToperation`) *op*, character(len=\*) *field*, type(`IXTrunfile`) *arg*, type(`IXTstatus`) *status*)

Definition at line 58 of file `IXMrunfile.f90`.

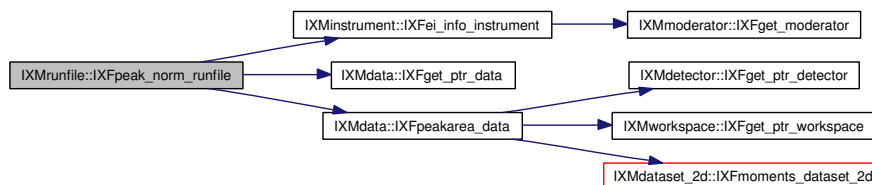
References `NXUmodule::status`.

**5.62.1.15** subroutine `IXMrunfile::IXFpeak_norm_runfile` (type(`IXTrunfile`) *rf*, integer(`i4b`),intent(in) *wk\_ind*, real(`dp`),intent(in) *ei*, real(`dp`),intent(in) *scale*, type(`IXTstatus`) *status*)

Definition at line 695 of file `IXMrunfile.f90`.

References `IXMinstrument::IXFei_info_instrument()`, `IXMdata::IXFget_ptr_data()`, `IXMdata::IXFpeakarea_data()`, and `NXUmodule::status`.

Here is the call graph for this function:

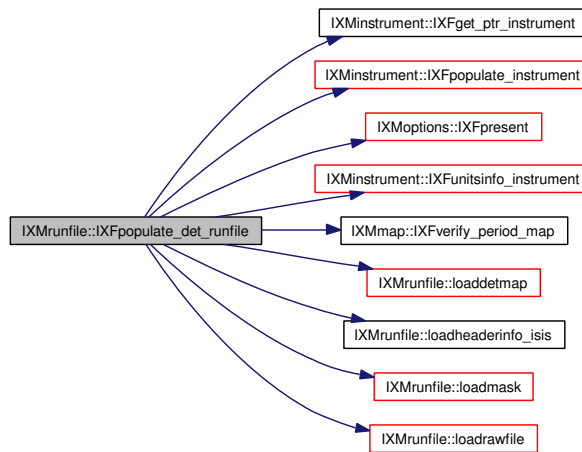


**5.62.1.16** subroutine `IXMrunfile::IXFpopulate_det_runfile` (`type(IXTrunfile)` *runfile*, `type(IXTstatus)` *status*, `type(IXTdata_source)`, `intent(in)` *dso*, `integer(i4b)`, `intent(in)` *period*, `type(IXTunits)`, `intent(in)`, `optional` *d\_units*, `real(dp)`, `dimension(:)`, `intent(in)`, `optional` *d\_rebin*, `real(dp)`, `dimension(2)`, `intent(in)`, `optional` *bgrd*, `type(IXToptions)`, `intent(in)`, `optional` *opt*)

Definition at line 382 of file `IXMrunfile.f90`.

References `IXMinstrument::IXFget_ptr_instrument()`, `IXMinstrument::IXFpopulate_instrument()`, `IXMoptions::IXFpresent()`, `IXMinstrument::IXFunitsinfo_instrument()`, `IXMmap::IXFverify_period_map()`, `loaddetmap()`, `loadheaderinfo_isis()`, `loadmask()`, `loadrawfile()`, and `NXUmodule::status`.

Here is the call graph for this function:

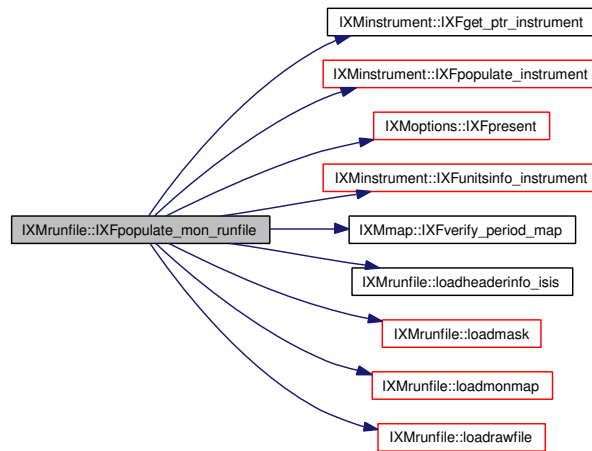


**5.62.1.17** subroutine `IXMrunfile::IXFpopulate_mon_runfile` (`type(IXTrunfile)` *runfile*, `type(IXTstatus)` *status*, `type(IXTdata_source)`, `intent(in)` *dso*, `integer(i4b)`, `intent(in)` *period*, `type(IXTunits)`, `intent(in)`, `optional` *m\_units*, `real(dp)`, `dimension(:)`, `intent(in)`, `optional` *m\_rebin*, `type(IXToptions)`, `intent(in)`, `optional` *opt*)

Definition at line 336 of file `IXMrunfile.f90`.

References `IXMinstrument::IXFget_ptr_instrument()`, `IXMinstrument::IXFpopulate_instrument()`, `IXMoptions::IXFpresent()`, `IXMinstrument::IXFunitsinfo_instrument()`, `IXMmap::IXFverify_period_map()`, `loadheaderinfo_isis()`, `loadmask()`, `loadmonmap()`, `loadrawfile()`, and `NXUmodule::status`.

Here is the call graph for this function:



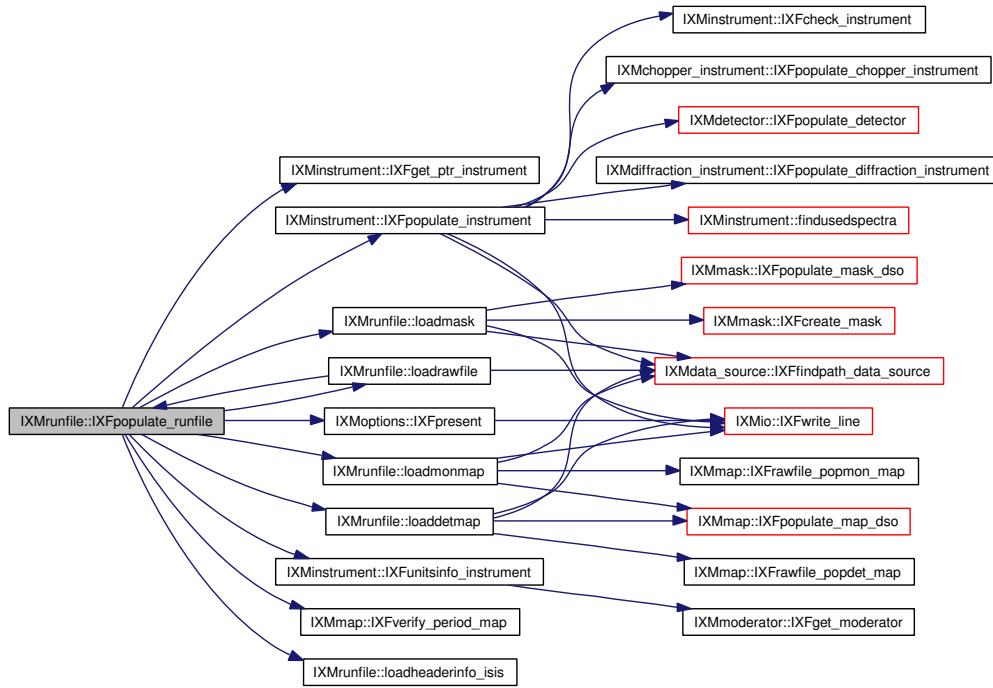
**5.62.1.18** subroutine `IXMrunfile::IXFpopulate_runfile` (`type(IXTrunfile)` *runfile*, `type(IXTstatus)` *status*, `type(IXTdata_source)`, `intent(in)` *dso*, `integer(i4b)`, `intent(in)` *period*, `type(IXTunits)`, `intent(in)`, `optional` *m\_units*, `real(dp)`, `dimension(:)`, `intent(in)`, `optional` *m\_rebin*, `type(IXTunits)`, `intent(in)`, `optional` *d\_units*, `real(dp)`, `dimension(:)`, `intent(in)`, `optional` *d\_rebin*, `real(dp)`, `dimension(2)`, `intent(in)`, `optional` *bgrd*, `type(IXToptions)`, `intent(in)`, `optional` *opt*)

Definition at line 803 of file `IXMrunfile.f90`.

References `IXMinstrument::IXFget_ptr_instrument()`, `IXMinstrument::IXFpopulate_instrument()`, `IXMoptions::IXFpresent()`, `IXMinstrument::IXFunitsinfo_instrument()`, `IXMmap::IXFverify_period_map()`, `loaddetmap()`, `loadheaderinfo_isis()`, `loadmask()`, `loadmonmap()`, `loaddrawfile()`, and `NXUmodule::status`.

Referenced by `loaddrawfile()`.

Here is the call graph for this function:



**5.62.1.19** subroutine `IXMrunfile::IXFrebin_runfile` (type(`IXTrunfile`) *runfile*, type(`IXTstatus`) *status*, real(dp), dimension(:), intent(in), optional *Xdesc*, type(`IXTdataset_2d`), optional *Xref*)

Definition at line 474 of file `IXMrunfile.f90`.

References `IXMdata::IXFrebin_data()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.62.1.20** subroutine `IXMrunfile::IXFremap_runfile` (type(`IXTrunfile`) *runfile*, type(`IXTdata_source`), intent(in) *dso*, type(`IXTstatus`) *status*)

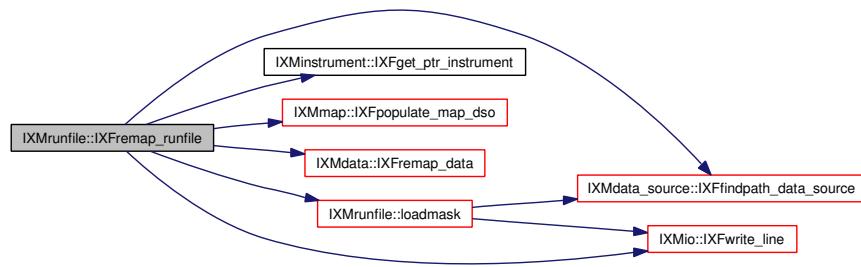
Definition at line 510 of file `IXMrunfile.f90`.

References `IXMdata_source::IXFfindpath_data_source()`, `IXMinstrument::IXFget_ptr_instrument()`, `IXMmap::IXFpopulate_map_dso()`, `IXMdata::IXFremap_data()`, `IXMio::IXFwrite_line()`, `loadmask()`, and `NXUmodule::status`.

Referenced by `IXFsolid_runfile()`.

Here is the call graph for this function:





**5.62.1.21** subroutine `IXMrunfile::IXFset_runfile` (`type(IXTrunfile) runfile`, `type(IXTstatus) status`, `character(len=*)`, `intent(in)`, optional `title`, `type(IXTuser)`, `dimension(:)`, `intent(in)`, optional `users`, `type(IXTsample)`, `intent(in)`, optional `sample`, `type(IXTinstrument)`, `intent(in)`, optional `inst`, `type(IXTdata)`, `intent(in)`, optional `det_data`, `type(IXTdata)`, `intent(in)`, optional `mon_data`, `type(IXTpeaks)`, `intent(in)`, optional `peaks`, `type(IXTrunfile)`, `intent(in)`, optional `ref`)

Definition at line 179 of file `IXMrunfile.f90`.

References `IXFcheck_runfile()`, and `NXUmodule::status`.

Referenced by `IXFcreate_runfile()`.

Here is the call graph for this function:

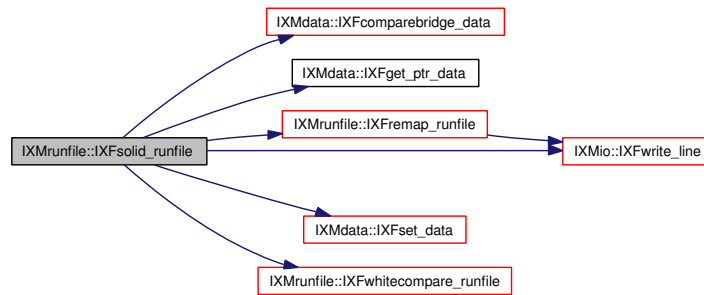


**5.62.1.22** subroutine `IXMrunfile::IXFsolid_runfile` (`type(IXTrunfile) rf`, `type(IXTdata_source) dso`, `type(IXTrunfile) wbrf`, `type(IXTstatus) status`)

Definition at line 568 of file `IXMrunfile.f90`.

References `IXMdata::IXFcomparebridge_data()`, `IXMdata::IXFget_ptr_data()`, `IXFremap_runfile()`, `IXMdata::IXFset_data()`, `IXFwhitecompare_runfile()`, `IXMio::IXFwrite_line()`, and `NXUmodule::status`.

Here is the call graph for this function:



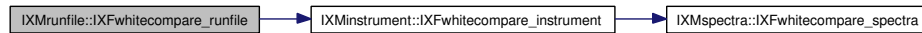
### 5.62.1.23 logical IXMrunfile::IXFwhitecompare\_runfile (type(IXTrunfile),intent(in) *sample*, type(IXTrunfile),intent(in) *whitebeam*)

Definition at line 642 of file IXMrunfile.f90.

References IXMinstrument::IXFwhitecompare\_instrument().

Referenced by IXFsolid\_runfile().

Here is the call graph for this function:



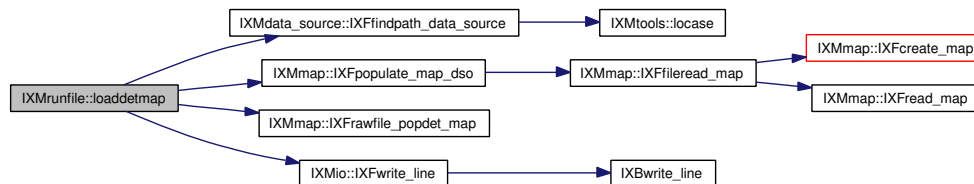
### 5.62.1.24 subroutine IXMrunfile::loaddetmap (type(IXTmap),intent(out) *det\_map*, type(IXTdata\_source) *dso*, type(IXTisis\_raw\_file),intent(in) *rawfile*, type(IXTstatus) *status*)

Definition at line 887 of file IXMrunfile.f90.

References IXMdata\_source::IXFfindpath\_data\_source(), IXMmap::IXFpopulate\_map\_dso(), IXMmap::IXFrawfile\_popdet\_map(), IXMio::IXFwrite\_line(), and NXUmodule::status.

Referenced by IXFpopulate\_det\_runfile(), and IXFpopulate\_runfile().

Here is the call graph for this function:



### 5.62.1.25 subroutine IXMrunfile::loadheaderinfo\_isis (type(IXTrunfile) *rfile*, type(IXTdata\_source) *dso*, type(IXTisis\_raw\_file),intent(in) *inputsource*, type(IXTstatus) *status*)

Definition at line 948 of file IXMrunfile.f90.

References NXUmodule::status.

Referenced by IXFpopulate\_det\_runfile(), IXFpopulate\_mon\_runfile(), and IXFpopulate\_runfile().

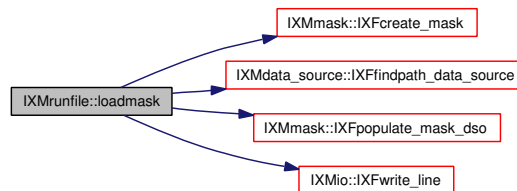
**5.62.1.26** subroutine IXMrunfile::loadmask (type(IXTmask),intent(out) *mask*, type(IXTdata\_source) *dso*, character(len=\*),intent(in) *masktype*, type(IXTstatus) *status*)

Definition at line 910 of file IXMrunfile.f90.

References IXMmask::IXFcreate\_mask(), IXMdata\_source::IXFfindpath\_data\_source(), IXMmask::IXFpopulate\_mask\_dso(), IXMio::IXFwrite\_line(), and NXUmodule::status.

Referenced by IXFpopulate\_det\_runfile(), IXFpopulate\_mon\_runfile(), IXFpopulate\_runfile(), and IXFremap\_runfile().

Here is the call graph for this function:



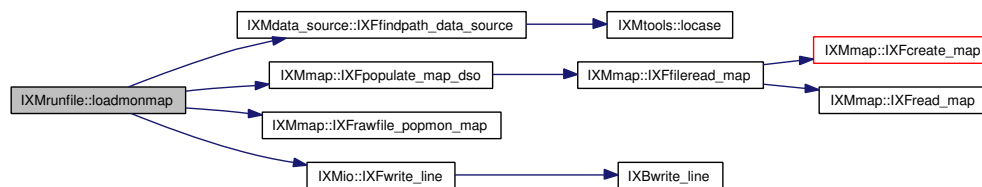
**5.62.1.27** subroutine IXMrunfile::loadmonmap (type(IXTmap),intent(out) *mon\_map*, type(IXTdata\_source) *dso*, type(IXTisis\_raw\_file),intent(in) *rawfile*, type(IXTstatus) *status*)

Definition at line 864 of file IXMrunfile.f90.

References IXMdata\_source::IXFfindpath\_data\_source(), IXMmap::IXFpopulate\_map\_dso(), IXMmap::IXFrawfile\_popmon\_map(), IXMio::IXFwrite\_line(), and NXUmodule::status.

Referenced by IXFpopulate\_mon\_runfile(), and IXFpopulate\_runfile().

Here is the call graph for this function:



**5.62.1.28** subroutine IXMrunfile::loaddrawfile (type(IXTisis\_raw\_file),intent(out) *rawfile*, type(IXTdata\_source) *dso*, type(IXTstatus) *status*)

Definition at line 930 of file IXMrunfile.f90.

References IXMdata\_source::IXFfindpath\_data\_source(), IXFpopulate\_runfile(), and NXU-module::status.

Referenced by IXFpopulate\_det\_runfile(), IXFpopulate\_mon\_runfile(), and IXFpopulate\_runfile().

Here is the call graph for this function:

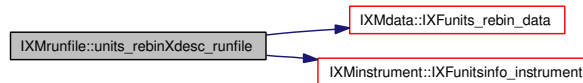


#### 5.62.1.29 subroutine IXMrunfile::units\_rebinXdesc\_runfile (type(IXTrunfile) *runfile*, type(IXTstatus) *status*, type(IXTunits),intent(in) *units\_out*, real(dp),dimension(:),intent(in) *Xdesc*)

Definition at line 441 of file IXMrunfile.f90.

References IXMdata::IXFunits\_rebin\_data(), IXMinstrument::IXFunitsinfo\_instrument(), and NXU-module::status.

Here is the call graph for this function:

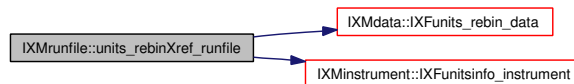


#### 5.62.1.30 subroutine IXMrunfile::units\_rebinXref\_runfile (type(IXTrunfile) *runfile*, type(IXTstatus) *status*, type(IXTunits),intent(in) *units\_out*, type(IXTdataset\_2d) *Xref*)

Definition at line 456 of file IXMrunfile.f90.

References IXMdata::IXFunits\_rebin\_data(), IXMinstrument::IXFunitsinfo\_instrument(), and NXU-module::status.

Here is the call graph for this function:

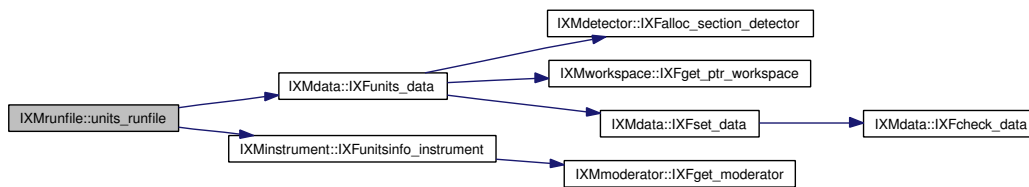


#### 5.62.1.31 subroutine IXMrunfile::units\_runfile (type(IXTrunfile) *runfile*, type(IXTstatus) *status*, type(IXTunits),intent(in) *units\_out*)

Definition at line 427 of file IXMrunfile.f90.

References IXMdata::IXFunits\_data(), IXMinstrument::IXFunitsinfo\_instrument(), and NXU-module::status.

Here is the call graph for this function:



## 5.62.2 Variable Documentation

### 5.62.2.1 integer(i4b),parameter IXMrunfile::IXCcomline\_initlength = 5

Definition at line 41 of file IXMrunfile.f90.

## 5.63 IXMsample Namespace Reference

### Classes

- struct `IXTsample`

### Functions

- subroutine `IXFcheck_sample` (`sample`, `status`)
- subroutine `IXFoperation_run_sample` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcreate_sample` (`sample`, `name`, `chemical_formula`, `temperature`, `electric_field`, `electric_coord`, `magnetic_field`, `magnetic_coord`, `pressure`, `lattice`, `uvec`, `vvec`, `psi`, `omega`, `gonio`, `shape`, `x_geom`, `y_geom`, `position`, `dimensions`, `radius`, `inner_radius`, `height`, `mass`, `molecular_weight`, `xcoh`, `xinc`, `xabs`, `status`)
- subroutine `IXFset_sample` (`sample`, `status`, `name`, `chemical_formula`, `temperature`, `electric_field`, `electric_coord`, `magnetic_field`, `magnetic_coord`, `pressure`, `lattice`, `uvec`, `vvec`, `psi`, `omega`, `gonio`, `shape`, `x_geom`, `y_geom`, `position`, `dimensions`, `radius`, `inner_radius`, `height`, `mass`, `molecular_weight`, `xcoh`, `xinc`, `xabs`, `ref`)
- subroutine `IXFget_sample` (`sample`, `status`, `name`, `chemical_formula`, `temperature`, `electric_field`, `electric_coord`, `magnetic_field`, `magnetic_coord`, `pressure`, `lattice`, `uvec`, `vvec`, `psi`, `omega`, `gonio`, `shape`, `x_geom`, `y_geom`, `position`, `dimensions`, `radius`, `inner_radius`, `height`, `mass`, `molecular_weight`, `xcoh`, `xinc`, `xabs`, `wout`)
- subroutine `IXFdestroy_sample` (`sample`, `status`)

### 5.63.1 Function Documentation

#### 5.63.1.1 subroutine `IXMsample::IXFcheck_sample` (`type(IXTsample) sample`, `type(IXTstatus) status`)

Definition at line 67 of file `IXMsample.f90`.

References `IXMbase::IXFcheck_base()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.63.1.2** subroutine IXMsample::IXFcreate\_sample (type(IXTsample) *sample*, character(len=\*) ,intent(in) *name*, character(len=\*) ,intent(in) *chemical\_formula*, real(dp),intent(in) *temperature*, real(dp),dimension(3),intent(in) *electric\_field*, character(len=\*) ,intent(in) *electric\_coord*, real(dp),dimension(3),intent(in) *magnetic\_field*, character(len=\*) ,intent(in) *magnetic\_coord*, real(dp),intent(in) *pressure*, type(IXTlattice),intent(in) *lattice*, real(dp),dimension(3),intent(in) *uvec*, real(dp),dimension(3),intent(in) *vvec*, real(dp),intent(in) *psi*, real(dp),intent(in) *omega*, real(dp),dimension(3),intent(in) *gonio*, character(len=\*) ,intent(in) *shape*, real(dp),dimension(3),intent(in) *x\_geom*, real(dp),dimension(3),intent(in) *y\_geom*, real(dp),dimension(3),intent(in) *position*, real(dp),dimension(3),intent(in) *dimensions*, real(dp),dimension,intent(in) *radius*, real(dp),dimension,intent(in) *inner\_radius*, real(dp),dimension,intent(in) *height*, real(dp),dimension,intent(in) *mass*, real(dp),dimension,intent(in) *molecular\_weight*, real(dp),dimension,intent(in) *xcoh*, real(dp),dimension,intent(in) *xinc*, real(dp),dimension,intent(in) *xabs*, type(IXTstatus) *status*)

Definition at line 127 of file IXMsample.f90.

References IXFset\_sample(), and NXUmodule::status.

Here is the call graph for this function:



**5.63.1.3** subroutine IXMsample::IXFdestroy\_sample (type(IXTsample) *sample*, type(IXTstatus) *status*)

Definition at line 299 of file IXMsample.f90.

References NXUmodule::status.

5.63.1.4 subroutine IXMsample::IXFget\_sample (type(IXTsample),intent(inout) *sample*, type(IXTstatus) *status*, character(len=\*),intent(out),optional *name*, character(len=\*),intent(out),optional *chemical\_formula*, real(dp),intent(out),optional *temperature*, real(dp),dimension(3),intent(out),optional *electric\_field*, character(len=\*),intent(out),optional *electric\_coord*, real(dp),dimension(3),intent(out),optional *magnetic\_field*, character(len=\*),intent(out),optional *magnetic\_coord*, real(dp),intent(out),optional *pressure*, type(IXTlattice),intent(out),optional *lattice*, real(dp),dimension(3),intent(out),optional *uvec*, real(dp),dimension(3),intent(out),optional *vvec*, real(dp),intent(out),optional *psi*, real(dp),intent(out),optional *omega*, real(dp),dimension(3),intent(out),optional *gonio*, character(len=\*),intent(out),optional *shape*, real(dp),dimension(3),intent(out),optional *x\_geom*, real(dp),dimension(3),intent(out),optional *y\_geom*, real(dp),dimension(3),intent(out),optional *position*, real(dp),dimension(3),intent(out),optional *dimensions*, real(dp),intent(out),optional *radius*, real(dp),intent(out),optional *inner\_radius*, real(dp),intent(out),optional *height*, real(dp),intent(out),optional *mass*, real(dp),intent(out),optional *molecular\_weight*, real(dp),intent(out),optional *xcoh*, real(dp),intent(out),optional *xinc*, real(dp),intent(out),optional *xabs*, type(IXTsample),intent(out),optional *wout*)

Definition at line 246 of file IXMsample.f90.

References NXUmodule::status.

5.63.1.5 subroutine IXMsample::IXFoperation\_run\_sample (type(IXToperation) *op*, character(len=\*) *field*, type(IXTsample),dimension *arg*, type(IXTstatus),dimension *status*)

Definition at line 81 of file IXMsample.f90.

References NXUmodule::status.



**5.63.1.6** subroutine IXMsample::IXFset\_sample  
 (type(IXTsample),dimension,intent(inout) *sample*,  
 type(IXTstatus) *status*, character(len=\*),intent(in),optional  
*name*, character(len=\*),intent(in),optional *chemical\_* -  
*formula*, real(dp),intent(in),optional *temperature*,  
 real(dp),dimension(3),intent(in),optional *electric\_field*,  
 character(len=\*),intent(in),optional *electric\_coord*,  
 real(dp),dimension(3),intent(in),optional *magnetic\_field*,  
 character(len=\*),intent(in),optional *magnetic\_coord*,  
 real(dp),intent(in),optional *pressure*, type(IXTlattice),intent(in),optional  
*lattice*, real(dp),dimension(3),intent(in),optional  
*uvec*, real(dp),dimension(3),intent(in),optional *vvec*,  
 real(dp),intent(in),optional *psi*, real(dp),intent(in),optional  
*omega*, real(dp),dimension(3),intent(in),optional  
*gonio*, character(len=\*),intent(in),optional *shape*,  
 real(dp),dimension(3),intent(in),optional *x\_geom*,  
 real(dp),dimension(3),intent(in),optional *y\_geom*,  
 real(dp),dimension(3),intent(in),optional *position*,  
 real(dp),dimension,intent(in),optional *dimensions*,  
 real(dp),dimension,intent(in),optional *radius*,  
 real(dp),dimension,intent(in),optional *inner\_* -  
*radius*, real(dp),dimension,intent(in),optional  
*height*, real(dp),dimension,intent(in),optional *mass*,  
 real(dp),dimension,intent(in),optional *molecular\_* -  
*weight*, real(dp),dimension,intent(in),optional  
*xcoh*, real(dp),dimension,intent(in),optional  
*xinc*, real(dp),dimension,intent(in),optional *xabs*,  
 type(IXTsample),dimension,intent(in),optional *ref*)

Definition at line 165 of file IXMsample.f90.

References NXUmodule::status.

Referenced by IXFcreate\_sample().

## 5.64 IXMshape Namespace Reference

### Classes

- struct IXTshape
- interface IXFvolume
- interface IXFsolid\_angle

### Functions

- subroutine IXFdestroy\_shape (arg, status)
- subroutine IXFoperation\_run\_shape (op, field, arg, status)
- subroutine IXFset\_shape (self, status, type, dimensions, ref)
- subroutine IXFget\_shape (self, status, type, dimensions, wout)
- subroutine IXFget\_ptr\_shape (shape, dims\_ptr)
- subroutine IXFget\_alloc\_shape (shape, dims\_alloc)
- subroutine IXFcreate\_shape (self, status, type, dimensions, shape)
- subroutine IXFcheck\_shape (shape, status)
- real(dp) IXFvolume\_shape (shape)
- real(dp) IXFsolid\_angle\_shape (shape, viewpoint)
- real(dp), dimension(:,:), pointer IXFarea\_vertices\_shape (shape, rotmat, vector)
- subroutine IXFprojarea\_vertices\_shape (shape, rotmat, vector, projection, px, py, status, radius, axes)
- subroutine IXFcheck\_point (dimensions, status)
- real(dp) IXFvolume\_point (dimensions)
- real(dp) IXFsolid\_angle\_point (dimensions, vp)
- real(dp), dimension(:,:), pointer IXFarea\_vertices\_point (dims, rotmat, vector)
- subroutine IXFcheck\_box (dimensions, status)
- real(dp) IXFvolume\_box (dimensions)
- real(dp) IXFsolid\_angle\_box (dims, vp)
- real(dp), dimension(:,:), pointer IXFarea\_vertices\_box (dims, rotmat, vector)
- subroutine IXFcheck\_cylinder (dimensions, status)
- real(dp) IXFvolume\_cylinder (dimensions)
- real(dp) IXFsolid\_angle\_cylinder (dimensions, vp)
- real(dp), dimension(:,:), pointer IXFarea\_vertices\_cylinder (dims, rotmat, vector)
- subroutine IXFcheck\_sphere (dimensions, status)
- real(dp) IXFvolume\_sphere (dimensions)
- real(dp) IXFsolid\_angle\_sphere (dimensions, vp)
- real(dp), dimension(:,:), pointer IXFarea\_vertices\_sphere (dims, rotmat, vector)
- subroutine IXFcheck\_holcyl (dimensions, status)
- real(dp) IXFvolume\_holcyl (dimensions)
- real(dp) IXFsolid\_angle\_holcyl (dimensions, vp)
- real(dp), dimension(:,:), pointer IXFarea\_vertices\_holcyl (dims, rotmat, vector)
- subroutine IXFcheck\_polygon (dimensions, status)
- real(dp) IXFvolume\_polygon (dimensions)
- real(dp) IXFsolid\_angle\_polygon (dimensions, vp)
- real(dp), dimension(:,:), pointer IXFarea\_vertices\_polygon (dimensions, rotmat, vector)

## Variables

- integer(i4b), parameter IXCpoint = 0
- integer(i4b), parameter IXCbox = 1
- integer(i4b), parameter IXCylinder = 2
- integer(i4b), parameter IXCsphere = 3
- integer(i4b), parameter IXCholcyl = 4
- integer(i4b), parameter IXCpolygon = 5

### 5.64.1 Function Documentation

**5.64.1.1** `real(dp),dimension(:,:) ,pointer IXMshape::IXFarea_vertices_box`  
(`real(dp),dimension(:),intent(in) dims`, `real(dp),dimension(3,3),intent(in) rotmat`, `real(dp),dimension(3) ,intent(in) vector`)

Definition at line 431 of file IXMshape.f90.

References NXUmodule::status.

Referenced by IXFarea\_vertices\_shape().

**5.64.1.2** `real(dp),dimension(:,:) ,pointer IXMshape::IXFarea_vertices_cylinder`  
(`real(dp),dimension(:),intent(in) dims`, `real(dp),dimension(3,3),intent(in) rotmat`, `real(dp),dimension(3) ,intent(in) vector`)

Definition at line 494 of file IXMshape.f90.

References NXUmodule::status.

Referenced by IXFarea\_vertices\_shape().

**5.64.1.3** `real(dp),dimension(:,:) ,pointer IXMshape::IXFarea_vertices_holcyl`  
(`real(dp),dimension(:),intent(in) dims`, `real(dp),dimension(3,3),intent(in) rotmat`, `real(dp),dimension(3) ,intent(in) vector`)

Definition at line 613 of file IXMshape.f90.

References NXUmodule::status.

Referenced by IXFarea\_vertices\_shape().

**5.64.1.4** `real(dp),dimension(:,:) ,pointer IXMshape::IXFarea_vertices_point`  
(`real(dp),dimension(:),intent(in) dims`, `real(dp),dimension(3,3),intent(in) rotmat`, `real(dp),dimension(3) ,intent(in) vector`)

Definition at line 369 of file IXMshape.f90.

References NXUmodule::status.

Referenced by IXFarea\_vertices\_shape().

**5.64.1.5** `real(dp),dimension(:,:) ,pointer IXMshape::IXFarea_ -  
vertices_polygon (real(dp),dimension(:),intent(in) dimensions,  
real(dp),dimension(3,3),intent(in) rotmat, real(dp),dimension(2)  
,intent(in) vector)`

Definition at line 700 of file IXMshape.f90.

References NXUmodule::status.

Referenced by IXFarea\_vertices\_shape().

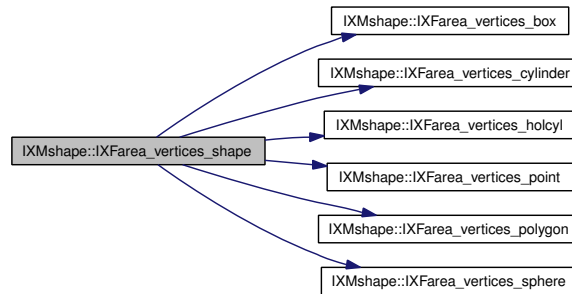
**5.64.1.6** `real(dp),dimension(:,:),pointer IXMshape::IXFarea_vertices_shape  
(type(IXTshape),intent(in) shape, real(dp),dimension,intent(in) rotmat,  
real(dp),dimension,intent(in) vector)`

Definition at line 305 of file IXMshape.f90.

References IXCbox, IXCylinder, IXCholcyl, IXCpoint, IXCpolygon, IXCsphere, IXFarea\_vertices\_box(), IXFarea\_vertices\_cylinder(), IXFarea\_vertices\_holcyl(), IXFarea\_vertices\_point(), IXFarea\_vertices\_polygon(), and IXFarea\_vertices\_sphere().

Referenced by IXMgeometry::IXFarea\_vertices\_geometry(), and IXFprojarea\_vertices\_shape().

Here is the call graph for this function:



**5.64.1.7** `real(dp),dimension(:,:) ,pointer IXMshape::IXFarea_vertices_sphere  
(real(dp),dimension(:),intent(in) dims, real(dp),dimension(3,3),intent(in)  
rotmat, real(dp),dimension(3) ,intent(in) vector)`

Definition at line 547 of file IXMshape.f90.

References NXUmodule::status, and IXMtype\_definitions::twopi\_dp.

Referenced by IXFarea\_vertices\_shape().

**5.64.1.8** `subroutine IXMshape::IXFcheck_box (real(dp),dimension(:) dimensions,  
type(IXTstatus) status)`

Definition at line 394 of file IXMshape.f90.

References NXUmodule::status.

Referenced by IXFcheck\_shape().

**5.64.1.9** subroutine IXMshape::IXFcheck\_cylinder (real(dp),dimension(:)  
*dimensions*, type(IXTstatus) *status*)

Definition at line 460 of file IXMshape.f90.

References NXUmodule::status.

Referenced by IXFcheck\_shape().

**5.64.1.10** subroutine IXMshape::IXFcheck\_holcyl (real(dp),dimension(:)  
*dimensions*, type(IXTstatus) *status*)

Definition at line 579 of file IXMshape.f90.

References NXUmodule::status.

Referenced by IXFcheck\_shape().

**5.64.1.11** subroutine IXMshape::IXFcheck\_point (real(dp),dimension(:)  
*dimensions*, type(IXTstatus) *status*)

Definition at line 342 of file IXMshape.f90.

References NXUmodule::status.

Referenced by IXFcheck\_shape().

**5.64.1.12** subroutine IXMshape::IXFcheck\_polygon (real(dp),dimension(:)  
*dimensions*, type(IXTstatus) *status*)

Definition at line 641 of file IXMshape.f90.

References NXUmodule::status.

Referenced by IXFcheck\_shape().

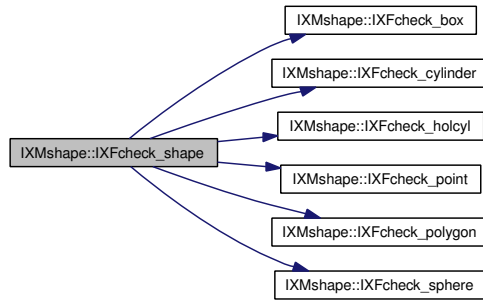
**5.64.1.13** subroutine IXMshape::IXFcheck\_shape (type(IXTshape) *shape*,  
type(IXTstatus),dimension *status*)

Definition at line 255 of file IXMshape.f90.

References IXFcheck\_box(), IXFcheck\_cylinder(), IXFcheck\_holcyl(), IXFcheck\_point(), IXFcheck\_polygon(), IXFcheck\_sphere(), and NXUmodule::status.

Referenced by IXMgeometry::IXFcheck\_geometry(), and IXFset\_shape().

Here is the call graph for this function:



**5.64.1.14** subroutine `IXMshape::IXFcheck_sphere` (`real(dp)`,`dimension(:)`  
*dimensions*, `type(IXTstatus)` *status*)

Definition at line 519 of file `IXMshape.f90`.

References `NXUmodule::status`.

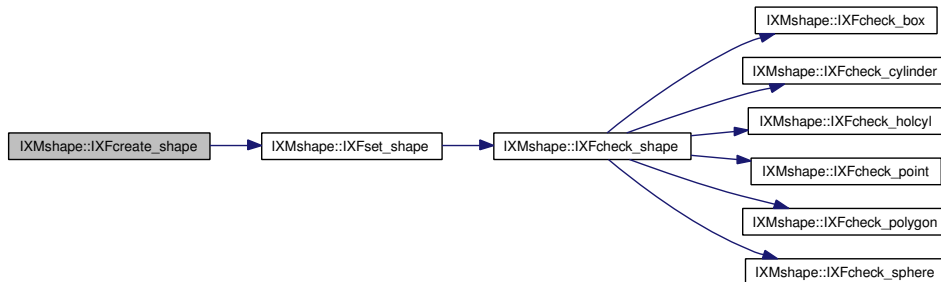
Referenced by `IXFcheck_shape()`.

**5.64.1.15** subroutine `IXMshape::IXFcreate_shape` (`type(IXTshape)`,`intent(out)`  
*self*, `type(IXTstatus)`,`dimension` *status*, `integer(i4b)`,`intent(in)`,`optional`  
*type*, `real(dp)`,`dimension(:)` ,`intent(in)`,`optional` *dimensions*,  
`type(IXTshape)`,`intent(in)`,`optional` *shape*)

Definition at line 233 of file `IXMshape.f90`.

References `IXFset_shape()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.64.1.16** subroutine `IXMshape::IXFdestroy_shape` (`type(IXTshape)` *arg*,  
`type(IXTstatus)` *status*)

Definition at line 61 of file `IXMshape.f90`.

**5.64.1.17** subroutine `IXMshape::IXFget_alloc_shape` (`type(IXTshape)`,`intent(in)`  
*shape*, `real(dp)`,`dimension(:)` ,`allocatable` *dims\_alloc*)

Definition at line 203 of file `IXMshape.f90`.

**5.64.1.18** subroutine IXMshape::IXFget\_ptr\_shape (type(IXTshape),intent(in) *shape*, real(dp),dimension(:) ,pointer *dims\_ptr*)

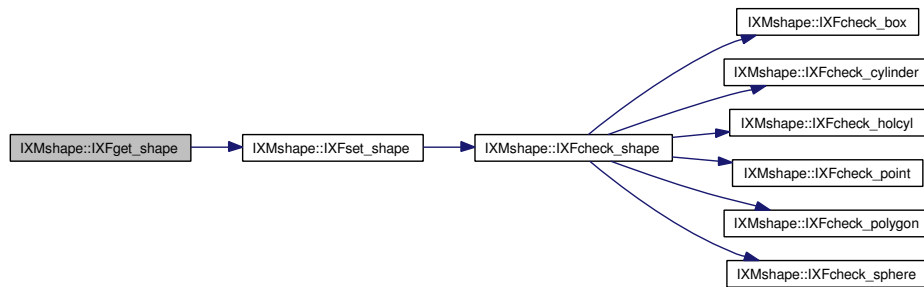
Definition at line 192 of file IXMshape.f90.

**5.64.1.19** subroutine IXMshape::IXFget\_shape (type(IXTshape),intent(in) *self*, type(IXTstatus),intent(inout) *status*, integer(i4b),intent(out),optional *type*, real(dp),dimension(:) ,intent(out),optional *dimensions*, type(IXTshape),intent(out),optional *wout*)

Definition at line 169 of file IXMshape.f90.

References IXFset\_shape(), and NXUmodule::status.

Here is the call graph for this function:



**5.64.1.20** subroutine IXMshape::IXFoperation\_run\_shape (type(IXToperation) *op*, character(len=\*) *field*, type(IXTshape),dimension *arg*, type(IXTstatus),dimension *status*)

Definition at line 68 of file IXMshape.f90.

References NXUmodule::status.

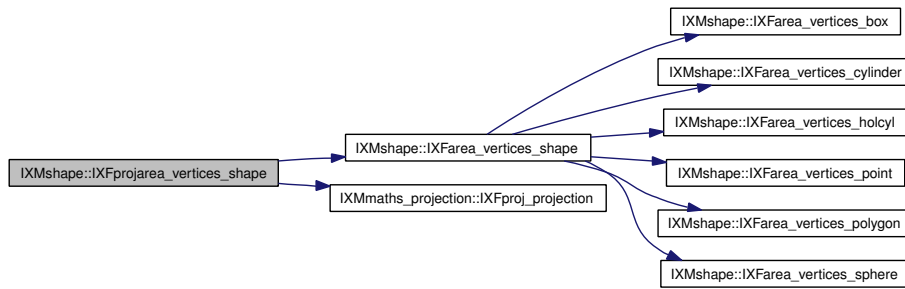
**5.64.1.21** subroutine IXMshape::IXFprojarea\_vertices\_shape (type(IXTshape),intent(in) *shape*, real(dp),dimension(3,3),intent(in) *rotmat*, real(dp),dimension(3) ,intent(in) *vector*, integer(i4b),intent(in) *projection*, real(dp),dimension(:),pointer *px*, real(dp),dimension(:),pointer *py*, type(IXTstatus) *status*, real(dp),intent(in),optional *radius*, integer(i4b),dimension(2),intent(in),optional *axes*)

Definition at line 317 of file IXMshape.f90.

References IXFarea\_vertices\_shape(), IXMmaths\_projection::IXFproj\_projection(), and NXUmodule::status.

Referenced by IXMgeometry::IXFprojarea\_vertices\_geometry().

Here is the call graph for this function:



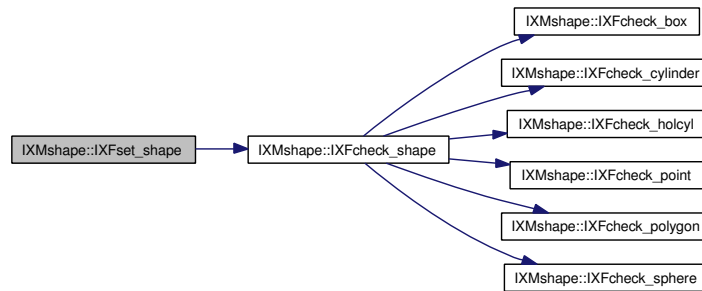
**5.64.1.22** subroutine `IXMshape::IXFset_shape` (`type(IXTshape)`, `intent(inout) self`, `type(IXTstatus)`, `dimension status`, `integer(i4b)`, `intent(in)`, `optional type`, `real(dp)`, `dimension(:)`, `intent(in)`, `optional dimensions`, `type(IXTshape)`, `intent(in)`, `optional ref`)

Definition at line 119 of file `IXMshape.f90`.

References `IXFcheck_shape()`, and `NXUmodule::status`.

Referenced by `IXMgeometry::IXFcreate_attributes_geometry()`, `IXFcreate_shape()`, `IXFget_shape()`, and `IXMgeometry::IXFset_geometry()`.

Here is the call graph for this function:



**5.64.1.23** `real(dp) IXMshape::IXFsolid_angle_box`  
 (`real(dp)`, `dimension(:)`, `intent(in) dims`, `real(dp)`, `dimension(3)`, `intent(in) vp`)

Definition at line 413 of file `IXMshape.f90`.

Referenced by `IXFsolid_angle_shape()`.

**5.64.1.24** `real(dp) IXMshape::IXFsolid_angle_cylinder`  
 (`real(dp)`, `dimension(2)`, `intent(in) dimensions`, `real(dp)`, `dimension(2)`, `intent(in) vp`)

Definition at line 479 of file `IXMshape.f90`.

Referenced by `IXFsolid_angle_shape()`.



**5.64.1.25** `real(dp) IXMshape::IXFsolid_angle_holcyl`  
`(real(dp),dimension(3),intent(in) dimensions,`  
`real(dp),dimension(2),intent(in) vp)`

Definition at line 598 of file IXMshape.f90.

Referenced by IXFsolid\_angle\_shape().

**5.64.1.26** `real(dp) IXMshape::IXFsolid_angle_point`  
`(real(dp),dimension(:),intent(in) dimensions, real(dp),dimension(3)`  
`,intent(in) vp)`

Definition at line 361 of file IXMshape.f90.

Referenced by IXFsolid\_angle\_shape().

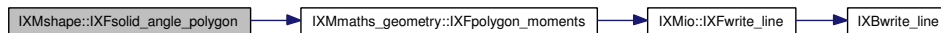
**5.64.1.27** `real(dp) IXMshape::IXFsolid_angle_polygon`  
`(real(dp),dimension(nvert+1:2*nvert),intent(in) dimensions,`  
`real(dp),dimension(3) ,intent(in) vp)`

Definition at line 682 of file IXMshape.f90.

References IXMmaths\_geometry::IXFpolygon\_moments(), and NXUmodule::status.

Referenced by IXFsolid\_angle\_shape().

Here is the call graph for this function:



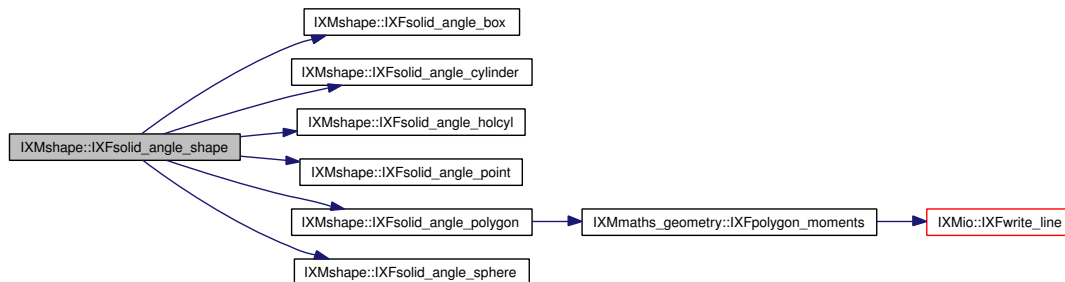
**5.64.1.28** `real(dp) IXMshape::IXFsolid_angle_shape` `(type(IXTshape),intent(in)`  
`shape, real(dp),dimension,intent(in) viewpoint)`

Definition at line 293 of file IXMshape.f90.

References IXCbox, IXCylinder, IXCholcyl, IXCpoint, IXCpolygon, IXCsphere, IXFsolid\_angle\_box(), IXFsolid\_angle\_cylinder(), IXFsolid\_angle\_holcyl(), IXFsolid\_angle\_point(), IXFsolid\_angle\_polygon(), and IXFsolid\_angle\_sphere().

Referenced by IXMgeometry::IXFsolid\_angle\_geometry().

Here is the call graph for this function:



**5.64.1.29** `real(dp) IXMshape::IXFsolid_angle_sphere`  
`(real(dp),dimension(:),intent(in) dimensions,`  
`real(dp),dimension(3),intent(in) vp)`

Definition at line 538 of file IXMshape.f90.

References IXMtype\_definitions::pi\_dp.

Referenced by IXFsolid\_angle\_shape().

**5.64.1.30** `real(dp) IXMshape::IXFvolume_box` `(real(dp),dimension(:),intent(in)`  
`dimensions)`

Definition at line 405 of file IXMshape.f90.

Referenced by IXFvolume\_shape().

**5.64.1.31** `real(dp) IXMshape::IXFvolume_cylinder` `(real(dp),dimension(2)`  
`,intent(in) dimensions)`

Definition at line 471 of file IXMshape.f90.

References IXMtype\_definitions::pi\_dp.

Referenced by IXFvolume\_shape().

**5.64.1.32** `real(dp) IXMshape::IXFvolume_holcyl` `(real(dp),dimension(3) ,intent(in)`  
`dimensions)`

Definition at line 590 of file IXMshape.f90.

References IXMtype\_definitions::pi\_dp.

Referenced by IXFvolume\_shape().

**5.64.1.33** `real(dp) IXMshape::IXFvolume_point` `(real(dp),dimension(:),intent(in)`  
`dimensions)`

Definition at line 353 of file IXMshape.f90.

Referenced by IXFvolume\_shape().

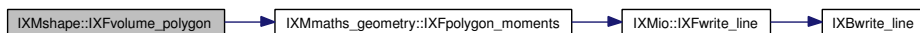
**5.64.1.34** `real(dp) IXMshape::IXFvolume_polygon`  
`(real(dp),dimension(nvert+1:2*nvert),intent(in)`  
`dimensions)`

Definition at line 662 of file IXMshape.f90.

References IXMmaths\_geometry::IXFpolygon\_moments(), and NXUmodule::status.

Referenced by IXFvolume\_shape().

Here is the call graph for this function:



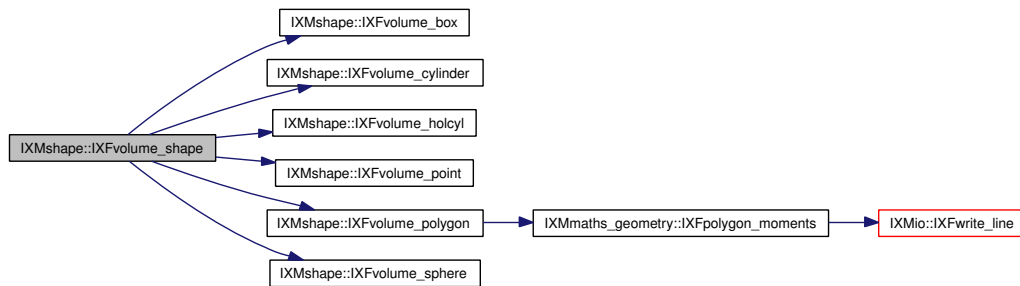
### 5.64.1.35 `real(dp) IXMshape::IXFvolume_shape (type(IXTshape),intent(in) shape)`

Definition at line 282 of file IXMshape.f90.

References `IXCbox`, `IXCylinder`, `IXCholcyl`, `IXCpoint`, `IXCpolygon`, `IXCsphere`, `IXFvolume_box()`, `IXFvolume_cylinder()`, `IXFvolume_holcyl()`, `IXFvolume_point()`, `IXFvolume_polygon()`, and `IXFvolume_sphere()`.

Referenced by `IXMgeometry::IXFvolume_geometry()`.

Here is the call graph for this function:



### 5.64.1.36 `real(dp) IXMshape::IXFvolume_sphere (real(dp),dimension(:),intent(in) dimensions)`

Definition at line 530 of file IXMshape.f90.

References `IXMtype_definitions::pi_dp`.

Referenced by `IXFvolume_shape()`.

## 5.64.2 Variable Documentation

### 5.64.2.1 `integer(i4b),parameter IXMshape::IXCbox = 1`

Definition at line 21 of file IXMshape.f90.

Referenced by `IXFarea_vertices_shape()`, `IXFsolid_angle_shape()`, and `IXFvolume_shape()`.

### 5.64.2.2 `integer(i4b),parameter IXMshape::IXCylinder = 2`

Definition at line 21 of file IXMshape.f90.

Referenced by `IXFarea_vertices_shape()`, `IXFsolid_angle_shape()`, and `IXFvolume_shape()`.

### 5.64.2.3 `integer(i4b),parameter IXMshape::IXCholcyl = 4`

Definition at line 21 of file IXMshape.f90.

Referenced by `IXFarea_vertices_shape()`, `IXFsolid_angle_shape()`, and `IXFvolume_shape()`.

**5.64.2.4 integer(i4b),parameter IXMshape::IXCpoint = 0**

Definition at line 21 of file IXMshape.f90.

Referenced by IXFarea\_vertices\_shape(), IXFsolid\_angle\_shape(), and IXFvolume\_shape().

**5.64.2.5 integer(i4b),parameter IXMshape::IXCpolygon = 5**

Definition at line 22 of file IXMshape.f90.

Referenced by IXFarea\_vertices\_shape(), IXFsolid\_angle\_shape(), and IXFvolume\_shape().

**5.64.2.6 integer(i4b),parameter IXMshape::IXCsphere = 3**

Definition at line 21 of file IXMshape.f90.

Referenced by IXFarea\_vertices\_shape(), IXFsolid\_angle\_shape(), and IXFvolume\_shape().

## 5.65 IXMshift Namespace Reference

### Functions

- subroutine IXFshift (array\_in, array\_out, shift)

#### 5.65.1 Function Documentation

**5.65.1.1** subroutine IXMshift::IXFshift (real(dp),dimension(:),intent(in) *array\_in*, real(dp),dimension(:) ,intent(out) *array\_out*, real(dp),intent(in) *shift*)

Definition at line 6 of file IXMshift.f90.

Referenced by IXMdataset\_1d::IXFshift\_dataset\_1d(), and IXMdataset\_2d::IXFshift\_dataset\_2d().

## 5.66 IXMsort Namespace Reference

## 5.67 IXMsource Namespace Reference

### Classes

- struct `IXTsource`

### Functions

- subroutine `IXFdestroy_source` (`arg`, `status`)
- subroutine `IXFcheck_source` (`source`, `status`)
- subroutine `IXFoperation_run_source` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcreate_source` (`source`, `facility_name`, `frequency`, `status`)
- subroutine `IXFset_source` (`source`, `status`, `facility_name`, `frequency`, `ref`)
- subroutine `IXFget_source` (`source`, `status`, `facility_name`, `frequency`, `wout`)

### 5.67.1 Function Documentation

**5.67.1.1** subroutine `IXMsource::IXFcheck_source` (`type(IXTsource)` *source*, `type(IXTstatus)` *status*)

Definition at line 51 of file `IXMsource.f90`.

References `NXUmodule::status`.

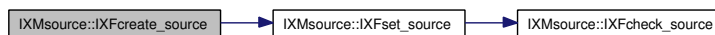
Referenced by `IXFset_source()`.

**5.67.1.2** subroutine `IXMsource::IXFcreate_source` (`type(IXTsource)`, `intent(out)` *source*, `character(len=*)`, `intent(in)` *facility\_name*, `real(dp)`, `intent(in)` *frequency*, `type(IXTstatus)`, `intent(inout)` *status*)

Definition at line 87 of file `IXMsource.f90`.

References `IXFset_source()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.67.1.3** subroutine `IXMsource::IXFdestroy_source` (`type(IXTsource)` *arg*, `type(IXTstatus)` *status*)

Definition at line 36 of file `IXMsource.f90`.

References `NXUmodule::status`.

**5.67.1.4** subroutine IXMsource::IXFget\_source (type(IXTsource),intent(inout) *source*, type(IXTstatus),intent(inout) *status*, character(len=\*),intent(out),optional *facility\_name*, real(dp),intent(out),optional *frequency*, type(IXTsource),intent(out),optional *wout*)

Definition at line 149 of file IXMsource.f90.

References NXUmodule::status.

**5.67.1.5** subroutine IXMsource::IXFoperation\_run\_source (type(IXToperation) *op*, character(len=\*) *field*, type(IXTsource) *arg*, type(IXTstatus) *status*)

Definition at line 64 of file IXMsource.f90.

References NXUmodule::status.

**5.67.1.6** subroutine IXMsource::IXFset\_source (type(IXTsource),intent(inout) *source*, type(IXTstatus),intent(inout) *status*, character(len=\*),intent(in),optional *facility\_name*, real(dp),intent(in),optional *frequency*, type(IXTsource),intent(in),optional *ref*)

Definition at line 110 of file IXMsource.f90.

References IXFcheck\_source(), and NXUmodule::status.

Referenced by IXFcreate\_source().

Here is the call graph for this function:





## 5.68 IXMspectra Namespace Reference

### Classes

- struct `IXTspectra`
- interface `IXFpopulate_spectra`

### Functions

- subroutine `IXFoperation_run_spectra` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcreate_spectra` (`spectra`, `spec_no`, `spec_lookup`, `ndet`, `det_index`, `det_no`, `status`)
- subroutine `IXFcheck_spectra` (`arg`, `status`)
- subroutine `IXFdestroy_spectra` (`spectra`, `status`)
- subroutine `IXFset_spectra` (`spectra`, `status`, `spec_lookup`, `spec_no`, `ndet`, `det_index`, `det_no`, `ref`)
- subroutine `IXFget_spectra` (`spectra`, `status`, `spec_lookup`, `spec_no`, `ndet`, `det_index`, `det_no`, `wout`)
- subroutine `IXFget_ptr_spectra` (`spectra`, `spec_lookup`, `spec_no`, `ndet`, `det_index`, `det_no`)
- subroutine `IXFget_alloc_spectra` (`spectra`, `status`, `spec_lookup`, `spec_no`, `ndet`, `det_index`, `det_no`, `wout`)
- subroutine `IXFgetdets_spectra` (`spectra`, `specs_in`, `dets_out`, `status`)
- subroutine `populate_list_dso_isis` (`spectra`, `inputsource`, `spec_list`, `list_out`, `status`)
- logical `IXFcompare_spectra` (`spec1`, `spec2`)
- logical `IXFwhitecompare_spectra` (`sample`, `whitebeam`)

### 5.68.1 Function Documentation

#### 5.68.1.1 subroutine `IXMspectra::IXFcheck_spectra` (`type(IXTspectra)` *arg*, `type(IXTstatus)` *status*)

Definition at line 97 of file `IXMspectra.f90`.

References `IXMbase::IXFcheck_base()`, and `NXUmodule::status`.

Referenced by `IXFset_spectra()`.

Here is the call graph for this function:



#### 5.68.1.2 logical `IXMspectra::IXFcompare_spectra` (`type(IXTspectra)`, `intent(in)` *spec1*, `type(IXTspectra)`, `intent(in)` *spec2*)

Definition at line 473 of file `IXMspectra.f90`.

Referenced by `IXMinstrument::IXFcompare_instrument()`.

**5.68.1.3** subroutine IXMspectra::IXFcreate\_spectra (type(IXTspectra) *spectra*, integer(i4b),dimension(:),intent(in) *spec\_* - *no*, integer(i4b),dimension(:),intent(in) *spec\_* - *lookup*, integer(i4b),dimension(:),intent(in) *ndet*, integer(i4b),dimension(:),intent(in) *det\_index*, integer(i4b),dimension(:),intent(in) *det\_no*, type(IXTstatus) *status*)

Definition at line 80 of file IXMspectra.f90.

References IXFset\_spectra(), and NXUmodule::status.

Here is the call graph for this function:



**5.68.1.4** subroutine IXMspectra::IXFdestroy\_spectra (type(IXTspectra) *spectra*, type(IXTstatus) *status*)

Definition at line 128 of file IXMspectra.f90.

References NXUmodule::status.

**5.68.1.5** subroutine IXMspectra::IXFget\_alloc\_spectra (type(IXTspectra),intent(in) *spectra*, type(IXTstatus) *status*, integer(i4b),dimension(:),optional,allocatable *spec\_lookup*, integer(i4b),dimension(:),optional,allocatable *spec\_no*, integer(i4b),dimension(:),optional,allocatable *ndet*, integer(i4b),dimension(:),optional,allocatable *det\_index*, integer(i4b),dimension(:),optional,allocatable *det\_no*, type(IXTspectra),intent(out) *wout*)

Definition at line 243 of file IXMspectra.f90.

References IXFget\_spectra(), and NXUmodule::status.

Here is the call graph for this function:



**5.68.1.6** subroutine IXMspectra::IXFget\_ptr\_spectra (type(IXTspectra) *spectra*, integer(i4b),dimension(:),optional,pointer *spec\_lookup*, integer(i4b),dimension(:),optional,pointer *spec\_no*, integer(i4b),dimension(:),optional,pointer *ndet*, integer(i4b),dimension(:),optional,pointer *det\_index*, integer(i4b),dimension(:),optional,pointer *det\_no*)

Definition at line 225 of file IXMspectra.f90.

**5.68.1.7** subroutine IXMspectra::IXFget\_spectra  
 (type(IXTspectra),intent(in) *spectra*, type(IXTstatus)  
*status*, integer(i4b),dimension(:),intent(out),optional  
*spec\_lookup*, integer(i4b),dimension(:),intent(out),optional  
*spec\_no*, integer(i4b),dimension(:),intent(out),optional *ndet*,  
 integer(i4b),dimension(:),intent(out),optional *det\_index*,  
 integer(i4b),dimension(:),intent(out),optional *det\_no*,  
 type(IXTspectra),intent(out),optional *wout*)

Definition at line 199 of file IXMspectra.f90.

References NXUmodule::status.

Referenced by IXFget\_alloc\_spectra(), and IXMmask::IXFget\_mask().

**5.68.1.8** subroutine IXMspectra::IXFgetdets\_spectra (type(IXTspectra)  
*spectra*, integer(i4b),dimension(:),intent(in) *specs\_in*,  
 integer(i4b),dimension(:),allocatable *dets\_out*, type(IXTstatus) *status*)

Definition at line 282 of file IXMspectra.f90.

References NXUmodule::status.

Referenced by IXMinstrument::finduseddetectors(), IXMeffdet\_index::IXFpopulate\_effdet\_index(), and IXMdata::popunitsrebin\_datasets().

**5.68.1.9** subroutine IXMspectra::IXFoperation\_run\_spectra (type(IXToperation)  
*op*, character(len=\*) *field*, type(IXTspectra) *arg*, type(IXTstatus) *status*)

Definition at line 56 of file IXMspectra.f90.

References NXUmodule::status.

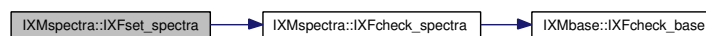
**5.68.1.10** subroutine IXMspectra::IXFset\_spectra  
 (type(IXTspectra),intent(inout) *spectra*, type(IXTstatus)  
*status*, integer(i4b),dimension(:),intent(in),optional  
*spec\_lookup*, integer(i4b),dimension(:),intent(in),optional  
*spec\_no*, integer(i4b),dimension(:),intent(in),optional *ndet*,  
 integer(i4b),dimension(:),intent(in),optional *det\_index*,  
 integer(i4b),dimension(:),intent(in),optional *det\_no*,  
 type(IXTspectra),intent(in),optional *ref*)

Definition at line 154 of file IXMspectra.f90.

References IXFcheck\_spectra(), and NXUmodule::status.

Referenced by IXFcreate\_spectra(), IXMtestclass::IXFget\_testclass(), IXMtestclass::IXFPlus\_testclass(), and IXMtestclass::IXFset\_testclass().

Here is the call graph for this function:



**5.68.1.11** logical IXMspectra::IXFwhitecompare\_spectra  
(type(IXTspectra),intent(in) *sample*, type(IXTspectra),intent(in)  
*whitebeam*)

Definition at line 492 of file IXMspectra.f90.

Referenced by IXMinstrument::IXFwhitecompare\_instrument().

**5.68.1.12** subroutine IXMspectra::populate\_list\_dso\_isis  
(type(IXTspectra) *spectra*, type(IXTisis\_raw\_file),intent(in)  
*inputsource*, integer(i4b),dimension(:),intent(in) *spec\_list*,  
integer(i4b),dimension(:),allocatable *list\_out*, type(IXTstatus) *status*)

Definition at line 332 of file IXMspectra.f90.

References NXUmodule::status.

## 5.69 IXMstatus Namespace Reference

### Classes

- struct IXTstatus\_condition
- struct IXTstatus
- interface interface
- interface IXFadd\_status
- interface IXFcheck\_status
- interface IXFclear\_status
- interface IXFreport\_status

### Functions

- subroutine IXFinit\_status (source, status)
- logical equal\_status (a, b)
- logical check\_global\_status (status\_type)
- logical notequal\_status (a, b)
- subroutine clear\_local\_status (status, report)
- subroutine clear\_global\_status (report)
- subroutine report\_local\_status (status)
- subroutine report\_global\_status ()
- subroutine make\_message\_status (condition, message)
- subroutine add\_source\_status (status, source)
- subroutine remove\_source\_status (status)
- subroutine add\_local\_status (status, facility, severity, code, message)
- subroutine add\_global\_status (facility, severity, code, message)
- logical check\_warning\_status (status, default\_source)
- logical check\_error\_status (status, default\_source)
- subroutine make\_traceback\_status (status, traceback)
- logical check\_local\_status (status, status\_type, default\_source)

### Variables

- integer, parameter IXCseverity\_ok = 1
- integer, parameter IXCseverity\_warning = 2
- integer, parameter IXCseverity\_info = 3
- integer, parameter IXCseverity\_error = 4
- integer, parameter IXCseverity\_debug = 5
- integer, parameter IXCseverity\_fatal = 6
- character(len=1), parameter IXCseverity\_names = (/ 'S','W','I','E','D','F' /)
- type(IXTstatus), save IXGstatus

#### 5.69.1 Function Documentation

- 5.69.1.1 subroutine IXMstatus::add\_global\_status (integer,intent(in) *facility*, integer,intent(in) *severity*, integer,intent(in) *code*, character(len=\*),intent(in) *message*)

Definition at line 274 of file IXMstatus.f90.

References IXGstatus.

**5.69.1.2** subroutine `IXMstatus::add_local_status` (`type(IXTstatus),intent(inout) status`, `integer,intent(in) facility`, `integer,intent(in) severity`, `integer,intent(in) code`, `character(len=*)`, `intent(in) message`)

Definition at line 246 of file `IXMstatus.f90`.

References `IXFinit_status()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.69.1.3** subroutine `IXMstatus::add_source_status` (`type(IXTstatus),intent(inout) status`, `character(len=*)`, `intent(in) source`)

Definition at line 231 of file `IXMstatus.f90`.

References `NXUmodule::status`.

**5.69.1.4** logical `IXMstatus::check_error_status` (`type(IXTstatus),intent(inout) status`, `character(len=*)`, `intent(in)`, `optional default_source`)

Definition at line 295 of file `IXMstatus.f90`.

References `IXCseverity_error`, and `NXUmodule::status`.

**5.69.1.5** logical `IXMstatus::check_global_status` (`integer,intent(in) status_type`)

Definition at line 142 of file `IXMstatus.f90`.

References `IXGstatus`.

**5.69.1.6** logical `IXMstatus::check_local_status` (`type(IXTstatus),intent(in) status`, `integer,intent(in) status_type`, `character(len=*)`, `intent(in)`, `optional default_source`)

Definition at line 321 of file `IXMstatus.f90`.

References `NXUmodule::status`.

**5.69.1.7** logical `IXMstatus::check_warning_status` (`type(IXTstatus),intent(inout) status`, `character(len=*)`, `intent(in)`, `optional default_source`)

Definition at line 282 of file `IXMstatus.f90`.

References `IXCseverity_warning`, and `NXUmodule::status`.

**5.69.1.8** subroutine `IXMstatus::clear_global_status` (`logical,intent(in)`, `optional report`)

Definition at line 185 of file `IXMstatus.f90`.

References IXGstatus.

**5.69.1.9** subroutine IXMstatus::clear\_local\_status (type(IXTstatus),intent(inout) *status*, logical,intent(in),optional *report*)

Definition at line 160 of file IXMstatus.f90.

References IXCseverity\_ok, and NXUmodule::status.

**5.69.1.10** logical IXMstatus::equal\_status (type(IXTstatus),intent(in) *a*, integer,intent(in) *b*)

Definition at line 134 of file IXMstatus.f90.

Referenced by notequal\_status().

**5.69.1.11** subroutine IXMstatus::IXFinit\_status (character(len=\*),intent(in) *source*, type(ixtstatus),intent(out) *status*)

Definition at line 116 of file IXMstatus.f90.

References IXCseverity\_ok, and NXUmodule::status.

Referenced by add\_local\_status().

**5.69.1.12** subroutine IXMstatus::make\_message\_status (type(IXTstatus\_ - condition),intent(in) *condition*, character(len=\*),intent(out) *message*)

Definition at line 219 of file IXMstatus.f90.

References IXCseverity\_names.

Referenced by report\_local\_status().

**5.69.1.13** subroutine IXMstatus::make\_traceback\_status (type(IXTStatus),intent(in) *status*, character(len=\*) *traceback*)

Definition at line 307 of file IXMstatus.f90.

References NXUmodule::status.

**5.69.1.14** logical IXMstatus::notequal\_status (type(IXTStatus),intent(in) *a*, integer,intent(in) *b*)

Definition at line 150 of file IXMstatus.f90.

References equal\_status().

Here is the call graph for this function:



### 5.69.1.15 subroutine IXMstatus::remove\_source\_status (type(IXTstatus),intent(inout) status)

Definition at line 239 of file IXMstatus.f90.

References NXUmodule::status.

### 5.69.1.16 subroutine IXMstatus::report\_global\_status ()

Definition at line 214 of file IXMstatus.f90.

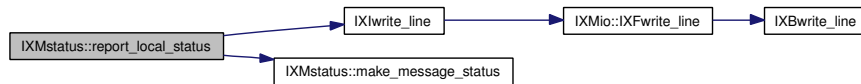
References IXGstatus.

### 5.69.1.17 subroutine IXMstatus::report\_local\_status (type(IXTstatus),intent(inout) status)

Definition at line 198 of file IXMstatus.f90.

References IXIwrite\_line(), make\_message\_status(), and NXUmodule::status.

Here is the call graph for this function:



## 5.69.2 Variable Documentation

### 5.69.2.1 integer,parameter IXMstatus::IXCseverity\_debug = 5

Definition at line 49 of file IXMstatus.f90.

### 5.69.2.2 integer,parameter IXMstatus::IXCseverity\_error = 4

Definition at line 48 of file IXMstatus.f90.

Referenced by check\_error\_status(), IXMmoments\_utils::get\_moments(), IXMmoments::IXFcreate\_moments(), IXMderivative::IXFderiv\_1\_1d(), IXMderivative::IXFderiv\_2\_1d(), IXMmisis\_raw\_file::IXFget\_char(), IXMmisis\_raw\_file::IXFget\_data\_i1(), IXMmisis\_raw\_file::IXFget\_data\_i2(), IXMmisis\_raw\_file::IXFget\_dp(), IXMmisis\_raw\_file::IXFget\_dp1(), IXMmisis\_raw\_file::IXFget\_dp2(), IXMmisis\_raw\_file::IXFget\_int(), IXMmisis\_raw\_file::IXFget\_int1(), IXMmisis\_raw\_file::IXFget\_int2(), IXMmisis\_raw\_file::IXFget\_real(), IXMmisis\_raw\_file::IXFget\_real1(), IXMmisis\_raw\_file::IXFget\_real2(), IXMmisis\_raw\_file::IXFget\_spectrum\_array\_d1(), IXMmisis\_raw\_file::IXFget\_spectrum\_array\_d2(), IXMmisis\_raw\_file::IXFget\_spectrum\_d1(), IXMmisis\_raw\_file::IXFget\_spectrum\_d2(), IXMintegrate::IXFintegrate\_1d\_hist(), IXMintegrate::IXFintegrate\_1d\_points(), IXMintegrate::IXFintegrate\_2d\_hist(), IXMmisis\_raw\_file::IXFopen\_raw\_handle(), IXMmaths\_geometry::IXFpolygon\_moments(), IXMmaths\_projection::IXFproj\_projection(), IXMrebin::IXFrebin\_1d\_hist(), IXMrebin::IXFrebin\_1d\_hist\_get\_arr(), IXMrebin::IXFrebin\_points(), IXMrebin::IXFrebinX\_2d\_hist(), IXMrebin::IXFrebinY\_2d\_hist(), IXMregroup::IXFregroup\_1d\_hist(), IXMregroup::IXFregroupX\_2d\_hist(), IXMregroup::IXFregroupY\_2d\_hist(),



IXMmoments::IXFset\_moments(), IXMisis\_raw\_file::IXFsize\_raw\_i(), IXMisis\_raw\_file::IXFsize\_raw\_i\_array(), IXMunits\_utils::IXFunits\_convert(), and IXMunits\_utils::IXFunits\_get\_len\_arr().

### 5.69.2.3 integer,parameter IXMstatus::IXCseverity\_fatal = 6

Definition at line 50 of file IXMstatus.f90.

Referenced by FERROR\_ADD().

### 5.69.2.4 integer,parameter IXMstatus::IXCseverity\_info = 3

Definition at line 47 of file IXMstatus.f90.

### 5.69.2.5 character(len=1),parameter IXMstatus::IXCseverity\_names = (/ 'S','W','I','E','D','F' /)

Definition at line 74 of file IXMstatus.f90.

Referenced by make\_message\_status().

### 5.69.2.6 integer,parameter IXMstatus::IXCseverity\_ok = 1

Definition at line 45 of file IXMstatus.f90.

Referenced by clear\_local\_status(), and IXFinit\_status().

### 5.69.2.7 integer,parameter IXMstatus::IXCseverity\_warning = 2

Definition at line 46 of file IXMstatus.f90.

Referenced by check\_warning\_status(), IXMintegrate::IXFintegrate\_1d\_hist(), IXMintegrate::IXFintegrate\_1d\_points(), and IXMintegrate::IXFintegrate\_2d\_hist().

### 5.69.2.8 type(IXTstatus),save IXMstatus::IXGstatus

Definition at line 109 of file IXMstatus.f90.

Referenced by add\_global\_status(), check\_global\_status(), clear\_global\_status(), and report\_global\_status().

## 5.70 IXMsw\_bridge Namespace Reference

### Classes

- struct `IXTsw_bridge`

### Functions

- subroutine `IXFoperation_run_sw_bridge` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcreate_sw_bridge` (`sw_bridge`, `spec_no`, `total_work`, `work_ind`, `work_no`, `status`)
- subroutine `IXFcheck_sw_bridge` (`arg`, `status`)
- subroutine `IXFdestroy_sw_bridge` (`sw_bridge`, `status`)
- subroutine `IXFset_sw_bridge` (`sw_bridge`, `status`, `spec_no`, `total_work`, `work_ind`, `work_no`, `ref`)
- subroutine `IXFget_sw_bridge` (`sw_bridge`, `status`, `spec_no`, `total_work`, `work_ind`, `work_no`, `wout`)
- subroutine `IXFget_ptr_sw_bridge` (`sw_bridge`, `spec_no`, `total_work`, `work_ind`, `work_no`)
- subroutine `IXFget_alloc_sw_bridge` (`sw_bridge`, `status`, `spec_no`, `total_work`, `work_ind`, `work_no`, `wout`)
- subroutine `IXFpopulate_sw_bridge` (`sw_bridge`, `wk_spec`, `specs`, `status`)

### 5.70.1 Function Documentation

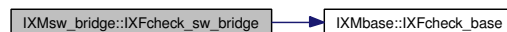
#### 5.70.1.1 subroutine `IXMsw_bridge::IXFcheck_sw_bridge` (`type(IXTsw_bridge) arg`, `type(IXTstatus) status`)

Definition at line 75 of file `IXMsw_bridge.f90`.

References `IXMbase::IXFcheck_base()`, and `NXUmodule::status`.

Referenced by `IXFset_sw_bridge()`.

Here is the call graph for this function:



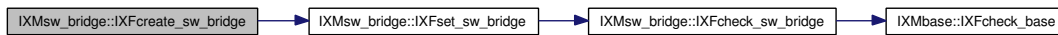
#### 5.70.1.2 subroutine `IXMsw_bridge::IXFcreate_sw_bridge` (`type(IXTsw_bridge) sw_bridge`, `integer(i4b),dimension(:),intent(in) spec_no`, `integer(i4b),dimension(:),intent(in) total_work`, `integer(i4b),dimension(:),intent(in) work_ind`, `integer(i4b),dimension(:),intent(in) work_no`, `type(IXTstatus) status`)

Definition at line 58 of file `IXMsw_bridge.f90`.

References `IXFset_sw_bridge()`, and `NXUmodule::status`.

Referenced by `IXFpopulate_sw_bridge()`.

Here is the call graph for this function:



### 5.70.1.3 subroutine IXMsw\_bridge::IXFdestroy\_sw\_bridge (type(IXTsw\_bridge) *sw\_bridge*, type(IXTstatus) *status*)

Definition at line 88 of file IXMsw\_bridge.f90.

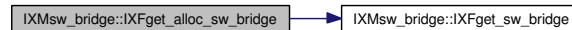
References NXUmodule::status.

### 5.70.1.4 subroutine IXMsw\_bridge::IXFget\_alloc\_sw\_bridge (type(IXTsw\_bridge),intent(in) *sw\_bridge*, type(IXTstatus) *status*, integer(i4b),dimension(:),optional,allocatable *spec\_no*, integer(i4b),dimension(:),optional,allocatable *total\_work*, integer(i4b),dimension(:),optional,allocatable *work\_ind*, integer(i4b),dimension(:),optional,allocatable *work\_no*, type(IXTsw\_bridge),intent(out),optional *wout*)

Definition at line 197 of file IXMsw\_bridge.f90.

References IXFget\_sw\_bridge(), and NXUmodule::status.

Here is the call graph for this function:



### 5.70.1.5 subroutine IXMsw\_bridge::IXFget\_ptr\_sw\_bridge (type(IXTsw\_bridge) *sw\_bridge*, integer(i4b),dimension(:),optional,pointer *spec\_no*, integer(i4b),dimension(:),optional,pointer *total\_work*, integer(i4b),dimension(:),optional,pointer *work\_ind*, integer(i4b),dimension(:),optional,pointer *work\_no*)

Definition at line 180 of file IXMsw\_bridge.f90.

### 5.70.1.6 subroutine IXMsw\_bridge::IXFget\_sw\_bridge (type(IXTsw\_bridge),intent(in) *sw\_bridge*, type(IXTstatus) *status*, integer(i4b),dimension(:),intent(out),optional *spec\_no*, integer(i4b),dimension(:),intent(out),optional *total\_work*, integer(i4b),dimension(:),intent(out),optional *work\_ind*, integer(i4b),dimension(:),intent(out),optional *work\_no*, type(IXTsw\_bridge),intent(out),optional *wout*)

Definition at line 157 of file IXMsw\_bridge.f90.

References NXUmodule::status.

Referenced by IXFget\_alloc\_sw\_bridge().

**5.70.1.7** subroutine `IXMsw_bridge::IXFoperation_run_sw_bridge`  
 (type(`IXToperation`) *op*, character(len=\*) *field*, type(`IXTsw_bridge`) *arg*,  
 type(`IXTstatus`) *status*)

Definition at line 36 of file `IXMsw_bridge.f90`.

References `NXUmodule::status`.

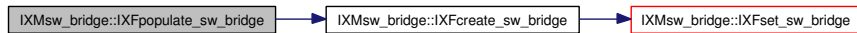
**5.70.1.8** subroutine `IXMsw_bridge::IXFpopulate_sw_bridge`  
 (type(`IXTsw_bridge`) *sw\_bridge*, integer(`i4b`),dimension(:) *wk\_spec*,  
 integer(`i4b`),dimension(:) *specs*, type(`IXTstatus`) *status*)

Definition at line 228 of file `IXMsw_bridge.f90`.

References `IXFcreate_sw_bridge()`, and `NXUmodule::status`.

Referenced by `IXMbridge::IXFpopulate_bridge()`.

Here is the call graph for this function:



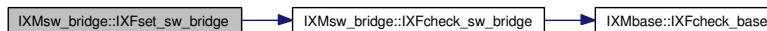
**5.70.1.9** subroutine `IXMsw_bridge::IXFset_sw_bridge` (type(`IXTsw_` -  
`bridge`),intent(inout) *sw\_bridge*, type(`IXTstatus`) *status*,  
 integer(`i4b`),dimension(:),intent(in),optional *spec\_no*,  
 integer(`i4b`),dimension(:),intent(in),optional *total\_work*,  
 integer(`i4b`),dimension(:),intent(in),optional *work\_ind*,  
 integer(`i4b`),dimension(:),intent(in),optional *work\_no*,  
 type(`IXTsw_bridge`),intent(in),optional *ref*)

Definition at line 112 of file `IXMsw_bridge.f90`.

References `IXFcheck_sw_bridge()`, and `NXUmodule::status`.

Referenced by `IXFcreate_sw_bridge()`.

Here is the call graph for this function:



## 5.71 IXMtestclass Namespace Reference

### Classes

- struct **IXTtestclass**
- interface **IXFcreate**

### Functions

- subroutine **IXFoperation\_run\_testclass** (op, field, arg, status)
- subroutine **IXFCreate\_testclass** (arg, val, nx, val\_array, err\_array, val\_stat, int\_arr, spectra, xhist, label, status)
- subroutine **IXFdestroy\_testclass** (arg, status)
- subroutine **IXFCheck\_Testclass** (arg, status)
- subroutine **IXFset\_testclass** (arg, status, val, nx, val\_array, err\_array, val\_stat, int\_arr, spectra, xhist, label, ref)
- subroutine **IXFget\_testclass** (arg, status, val, nx, val\_array, err\_array, val\_stat, int\_arr, spectra, xhist, label, wout)
- subroutine **IXFget\_alloc\_testclass** (arg, status, val, nx, val\_array, err\_array, val\_stat, int\_arr, spectra, xhist, label, wout)
- subroutine **IXFget\_ptr\_testclass** (arg, val\_array, err\_array, int\_arr, spectra)
- subroutine **IXFcreate\_special\_testclass** (arg, val\_array, err\_array, spectra, status)
- subroutine **IXFPlus\_testclass** (wres, w1, w2, status)
- subroutine **IXFtestfunc\_testclass** (w1, status)

### 5.71.1 Function Documentation

#### 5.71.1.1 subroutine IXMtestclass::IXFCheck\_Testclass (type(IXTtestclass) *arg*, type(IXTstatus) *status*)

Definition at line 150 of file IXMtestclass.f90.

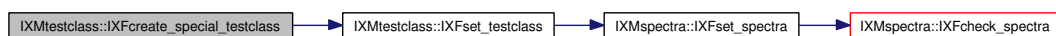
References NXUmodule::status.

#### 5.71.1.2 subroutine IXMtestclass::IXFcreate\_special\_testclass (type(IXTtestclass) *arg*, real(dp),dimension(:),intent(in) *val\_array*, real(dp),dimension(:),intent(in) *err\_array*, type(IXTspectra),intent(in) *spectra*, type(IXTstatus) *status*)

Definition at line 348 of file IXMtestclass.f90.

References IXFset\_testclass(), and NXUmodule::status.

Here is the call graph for this function:



**5.71.1.3** subroutine `IXMtestclass::IXFCreate_testclass`  
 (type(`IXTtestclass`) *arg*, real(`dp`),intent(in) *val*, integer(`i4b`),intent(in) *nx*,  
 real(`dp`),dimension(:),intent(in) *val\_array*, real(`dp`),dimension(:),intent(in)  
*err\_array*, real(`dp`),dimension(3),intent(in) *val\_stat*,  
 integer(`i4b`),dimension(:,:),intent(in) *int\_arr*, type(`IXTspectra`),intent(in)  
*spectra*, logical,intent(in) *xhist*, character(len=\*) *label*, type(`IXTstatus`)  
*status*)

Definition at line 96 of file `IXMtestclass.f90`.

References `IXFset_testclass()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.71.1.4** subroutine `IXMtestclass::IXFdestroy_testclass`  
 (type(`IXTtestclass`),intent(inout) *arg*, type(`IXTstatus`) *status*)

Definition at line 128 of file `IXMtestclass.f90`.

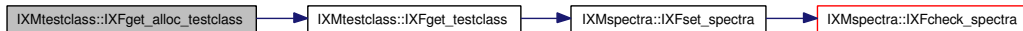
References `NXUmodule::status`.

**5.71.1.5** subroutine `IXMtestclass::IXFget_alloc_testclass`  
 (type(`IXTtestclass`),intent(in) *arg*, type(`IXTstatus`) *status*,  
 real(`dp`),intent(out),optional *val*, integer(`i4b`),intent(out),optional  
*nx*, real(`dp`),dimension(:),intent(out),optional,allocatable  
*val\_array*, real(`dp`),dimension(:),intent(out),optional,allocatable  
*err\_array*, real(`dp`),dimension(3),intent(out),optional *val\_stat*,  
 integer(`i4b`),dimension(:,:),intent(out),optional,allocatable  
*int\_arr*, type(`IXTspectra`),intent(out),optional *spectra*,  
 logical,intent(out),optional *xhist*, character(len=\*),intent(out),optional  
*label*, type(`IXTtestclass`),intent(out),optional *wout*)

Definition at line 295 of file `IXMtestclass.f90`.

References `IXFget_testclass()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.71.1.6** subroutine `IXMtestclass::IXFget_ptr_testclass`  
 (type(`IXTtestclass`),intent(in),target *arg*,  
 real(`dp`),dimension(:),optional,pointer *val\_array*,  
 real(`dp`),dimension(:),optional,pointer *err\_array*,  
 integer(`i4b`),dimension(:,:),optional,pointer *int\_arr*,  
 type(`IXTspectra`),optional,pointer *spectra*)

Definition at line 329 of file `IXMtestclass.f90`.

**5.71.1.7** subroutine `IXMtestclass::IXFget_testclass` (`type(IXTtestclass) arg`, `type(IXTstatus) status`, `real(dp),intent(out),optional val`, `integer(i4b),intent(out),optional nx`, `real(dp),dimension(:),intent(out),optional val_array`, `real(dp),dimension(:),intent(out),optional err_array`, `real(dp),dimension(3),intent(out),optional val_stat`, `integer(i4b),dimension(:,:),intent(out),optional int_arr`, `type(IXTspectra),intent(out),optional spectra`, `logical,intent(out),optional xhist`, `character(len=*)`, `intent(out),optional label`, `type(IXTtestclass),intent(out),optional wout`)

Definition at line 244 of file `IXMtestclass.f90`.

References `IXMspectra::IXFset_spectra()`, and `NXUmodule::status`.

Referenced by `IXFget_alloc_testclass()`.

Here is the call graph for this function:



**5.71.1.8** subroutine `IXMtestclass::IXFoperation_run_testclass` (`type(IXToperation) op`, `character(len=*) field`, `type(IXTtestclass) arg`, `type(IXTstatus) status`)

Definition at line 68 of file `IXMtestclass.f90`.

References `NXUmodule::status`.

**5.71.1.9** subroutine `IXMtestclass::IXFPlus_testclass` (`type(IXTtestclass) wres`, `type(IXTtestclass) w1`, `type(IXTtestclass) w2`, `type(IXTstatus) status`)

Definition at line 386 of file `IXMtestclass.f90`.

References `IXMspectra::IXFset_spectra()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.71.1.10** subroutine `IXMtestclass::IXFset_testclass` (`type(IXTtestclass) arg`, `type(IXTstatus) status`, `real(dp),intent(in),optional val`, `integer(i4b),intent(in),optional nx`, `real(dp),dimension(:),intent(in),optional val_array`, `real(dp),dimension(3),intent(in),optional err_array`, `integer(i4b),dimension(:,:),intent(in),optional val_stat`, `type(IXTspectra),intent(in),optional spectra`, `logical,intent(in),optional xhist`, `character(len=*)`, `intent(in),optional label`, `type(IXTtestclass),intent(in),optional ref`)

Definition at line 167 of file `IXMtestclass.f90`.

References IXMspectra::IXFset\_spectra(), and NXUmodule::status.

Referenced by IXFcreate\_special\_testclass(), and IXFCreate\_testclass().

Here is the call graph for this function:



#### 5.71.1.11 subroutine IXMtestclass::IXFtestfunc\_testclass (type(IXTtestclass) *w1*, type(IXTstatus) *status*)

Definition at line 407 of file IXMtestclass.f90.



## 5.72 IXMtools Namespace Reference

### Functions

- subroutine `unitno` (`iunit`)
- integer(`i4b`) `shutfl` (`iunit`)
- subroutine `remark` (`string`)
- subroutine `prompt` (`string`)
- subroutine `homer_message` (`intro`, `message`, `fname`)
- integer(`i4b`) `getlin` (`line`)
- integer(`i4b`) `getlf` (`iunit`, `line`)
- subroutine `read_line` (`iunit`, `line`, `len_line`)
- integer(`i4b`) `inext` (`string`, `i`)
- integer(`i4b`) `inxtch` (`string`, `i`, `ch`)
- integer(`i4b`) `iprvch` (`string`, `i`, `ch`)
- integer(`i4b`) `idelim` (`string`, `i`, `ch`)
- integer(`i4b`) `lenstr` (`string`)
- subroutine `upcase` (`string`)
- subroutine `locase` (`string`)
- subroutine `cspace` (`string`)
- integer(`i4b`) `ctoxi` (`string`, `i`)
- integer(`i4b`) `ctoxi2` (`string`, `i`, `k1`, `k2`)
- integer(`i4b`) `ctoi` (`string`, `i`)
- integer(`i4b`) `ctoi2` (`string`, `i`, `k1`, `k2`)
- integer(`i4b`) `geti` (`string`, `i`, `value`, `iproblem`)
- integer(`i4b`) `getis` (`string`, `i`, `values`, `m`, `iproblem`)
- real(`dp`) `ctoxd` (`string`, `i`)
- real(`dp`) `ctod` (`string`, `i`)
- integer(`i4b`) `getd` (`string`, `i`, `value`, `iproblem`)
- integer(`i4b`) `getds` (`string`, `i`, `values`, `m`, `iproblem`)
- real(`sp`) `ctoxr` (`string`, `i`)
- real(`sp`) `ctor` (`string`, `i`)
- integer(`i4b`) `getr` (`string`, `i`, `value`, `iproblem`)
- integer(`i4b`) `getrs` (`string`, `i`, `values`, `m`, `iproblem`)

### Variables

- integer(`i4b`), parameter `stdin` = `-5_i4b`
- integer(`i4b`), parameter `stdout` = `-6_i4b`
- integer(`i4b`), parameter `ok` = `0_i4b`
- integer(`i4b`), parameter `warn` = `-1_i4b`
- integer(`i4b`), parameter `err` = `-100_i4b`
- integer(`i4b`), parameter `eof` = `-101_i4b`
- integer(`i4b`), parameter `read` = `1001_i4b`
- integer(`i4b`), parameter `readwr` = `1002_i4b`
- integer(`i4b`), parameter `old` = `1101_i4b`
- integer(`i4b`), parameter `new` = `1102_i4b`
- integer(`i4b`), parameter `oldnew` = `1103_i4b`
- character(`len=4`), parameter `trail_space` = `achar(9)//achar(32)//achar(0)//achar(13)`
- character(`len=2`), parameter `numeric_list_terminator` = `'`

## 5.72.1 Function Documentation

### 5.72.1.1 subroutine IXMtools::cspace (character(len=\*) *string*)

Definition at line 533 of file IXMtools.f90.

Referenced by read\_line().

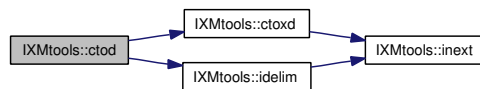
### 5.72.1.2 real(dp) IXMtools::ctod (character(len=\*),intent(in) *string*, integer(i4b),intent(inout) *i*)

Definition at line 1032 of file IXMtools.f90.

References ctoxd(), and idelim().

Referenced by getd(), and getds().

Here is the call graph for this function:



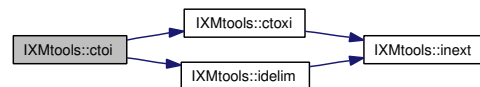
### 5.72.1.3 integer(i4b) IXMtools::ctoi (character(len=\*),intent(in) *string*, integer(i4b),intent(inout) *i*)

Definition at line 698 of file IXMtools.f90.

References ctoxi(), and idelim().

Referenced by geti().

Here is the call graph for this function:



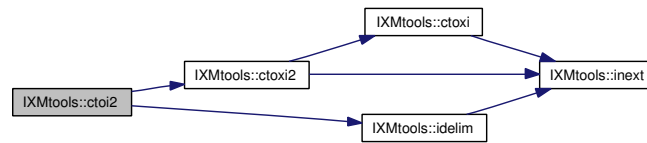
### 5.72.1.4 integer(i4b) IXMtools::ctoi2 (character(len=\*),intent(in) *string*, integer(i4b),intent(inout) *i*, integer(i4b),intent(inout) *k1*, integer(i4b),intent(inout) *k2*)

Definition at line 734 of file IXMtools.f90.

References ctoxi2(), and idelim().

Referenced by getis().

Here is the call graph for this function:



#### 5.72.1.5 `real(sp) IXMtools::ctor (character(len=*),intent(in) string, integer(i4b),intent(inout) i)`

Definition at line 1166 of file IXMtools.f90.

#### 5.72.1.6 `real(dp) IXMtools::ctoxd (character(len=*),intent(in) string, integer(i4b),intent(inout) i)`

Definition at line 886 of file IXMtools.f90.

References `inext()`.

Referenced by `ctod()`.

Here is the call graph for this function:



#### 5.72.1.7 `integer(i4b) IXMtools::ctoxi (character(len=*),intent(in) string, integer(i4b),intent(inout) i)`

Definition at line 562 of file IXMtools.f90.

References `inext()`.

Referenced by `ctoi()`, and `ctoxi2()`.

Here is the call graph for this function:



#### 5.72.1.8 `integer(i4b) IXMtools::ctoxi2 (character(len=*),intent(in) string, integer(i4b),intent(inout) i, integer(i4b),intent(inout) k1, integer(i4b),intent(inout) k2)`

Definition at line 631 of file IXMtools.f90.

References `ctoxi()`, and `inext()`.

Referenced by `ctoi2()`.

Here is the call graph for this function:



**5.72.1.9** `real(sp) IXMtools::ctoxr (character(len=*),intent(in) string, integer(i4b),intent(inout) i)`

Definition at line 1158 of file IXMtools.f90.

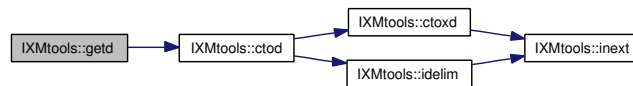
**5.72.1.10** `integer(i4b) IXMtools::getd (character(len=*),intent(in) string, integer(i4b),intent(inout) i, real(dp),intent(inout) value, integer(i4b),intent(inout),optional iproblem)`

Definition at line 1070 of file IXMtools.f90.

References `ctod()`.

Referenced by `getr()`.

Here is the call graph for this function:



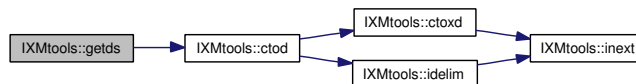
**5.72.1.11** `integer(i4b) IXMtools::getds (character(len=*),intent(in) string, integer(i4b),intent(inout) i, real(dp),dimension(:),intent(inout) values, integer(i4b),intent(in) m, integer(i4b),intent(inout),optional iproblem)`

Definition at line 1122 of file IXMtools.f90.

References `ctod()`.

Referenced by `getrs()`.

Here is the call graph for this function:

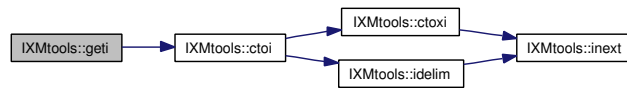


**5.72.1.12** `integer(i4b) IXMtools::geti (character(len=*),intent(in) string, integer(i4b),intent(inout) i, integer(i4b),intent(inout) value, integer(i4b),intent(inout),optional iproblem)`

Definition at line 779 of file IXMtools.f90.

References `ctoi()`.

Here is the call graph for this function:



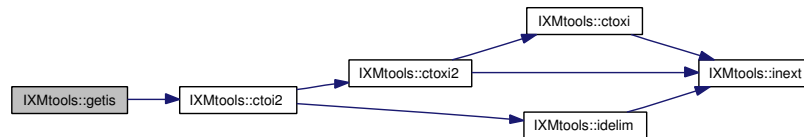
**5.72.1.13** `integer(i4b) IXMtools::getis (character(len=*),intent(in) string, integer(i4b),intent(inout) i, integer(i4b),dimension(:),intent(inout) values, integer(i4b),intent(in) m, integer(i4b),intent(inout),optional iproblem)`

Definition at line 829 of file IXMtools.f90.

References `ctoi2()`.

Referenced by `IXMmask::IXFread_mask()`.

Here is the call graph for this function:



**5.72.1.14** `integer(i4b) IXMtools::getlf (integer(i4b),intent(in) iunit, character(len=*),intent(out) line)`

Definition at line 232 of file IXMtools.f90.

References `err`, and `lenstr()`.

Referenced by `getlin()`, and `read_line()`.

Here is the call graph for this function:

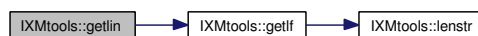


**5.72.1.15** `integer(i4b) IXMtools::getlin (character(len=*),intent(out) line)`

Definition at line 140 of file IXMtools.f90.

References `getlf()`.

Here is the call graph for this function:



**5.72.1.16** `integer(i4b) IXMtools::getr (character(len=*),intent(in) string, integer(i4b),intent(inout) i, real(sp),intent(inout) value, integer(i4b),intent(inout),optional iproblem)`

Definition at line 1174 of file IXMtools.f90.

References `getd()`.

Here is the call graph for this function:



**5.72.1.17** `integer(i4b) IXMtools::getrs (character(len=*),intent(in) string, integer(i4b),intent(inout) i, real(sp),dimension(:),intent(inout) values, integer(i4b),intent(in) m, integer(i4b),intent(inout),optional iproblem)`

Definition at line 1191 of file IXMtools.f90.

References `getds()`.

Here is the call graph for this function:

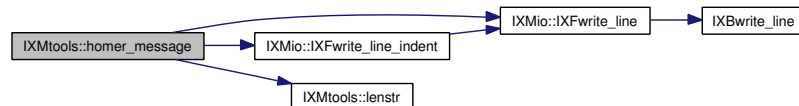


**5.72.1.18** `subroutine IXMtools::homer_message (character(len=*),intent(in) intro, character(len=*),intent(in) message, character(len=*),intent(in) fname)`

Definition at line 116 of file IXMtools.f90.

References `IXMio::IXFwrite_line()`, `IXMio::IXFwrite_line_indent()`, `lenstr()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.72.1.19** `integer(i4b) IXMtools::idelim (character(len=*),intent(in) string, integer(i4b),intent(in) i, character(len=*),intent(in) ch)`

Definition at line 444 of file IXMtools.f90.

References `inext()`.

Referenced by ctod(), ctoi(), and ctoi2().

Here is the call graph for this function:



**5.72.1.20 integer(i4b) IXMtools::inext (character(len=\*),intent(in) *string*, integer(i4b),intent(in) *i*)**

Definition at line 318 of file IXMtools.f90.

References trail\_space.

Referenced by ctoxd(), ctoxi(), ctoxi2(), idelim(), and read\_line().

**5.72.1.21 integer(i4b) IXMtools::inxtch (character(len=\*),intent(in) *string*, integer(i4b),intent(in) *i*, character(len=1),intent(in) *ch*)**

Definition at line 353 of file IXMtools.f90.

**5.72.1.22 integer(i4b) IXMtools::iprvch (character(len=\*),intent(in) *string*, integer(i4b),intent(in) *i*, character(len=1),intent(in) *ch*)**

Definition at line 396 of file IXMtools.f90.

**5.72.1.23 integer(i4b) IXMtools::lenstr (character(len=\*),intent(in) *string*)**

Definition at line 482 of file IXMtools.f90.

References trail\_space.

Referenced by getlf(), homer\_message(), prompt(), and remark().

**5.72.1.24 subroutine IXMtools::locase (character(len=\*),intent(inout) *string*)**

Definition at line 515 of file IXMtools.f90.

Referenced by IXMdata\_source::IXFadditem\_data\_source(), IXMdata\_source::IXFdelitem\_data\_source(), IXMdata\_source::IXFfindpath\_data\_source(), and IXMunits\_utils::units\_coefficients().

**5.72.1.25 subroutine IXMtools::prompt (character(len=\*),intent(in) *string*)**

Definition at line 95 of file IXMtools.f90.

References lenstr().

Here is the call graph for this function:



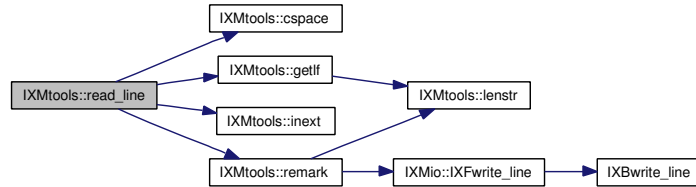
**5.72.1.26** subroutine `IXMtools::read_line` (`integer(i4b) iunit`, `character(len=*) line`, `integer(i4b) len_line`)

Definition at line 275 of file `IXMtools.f90`.

References `cspace()`, `getlf()`, `inext()`, and `remark()`.

Referenced by `IXMmask::IXFread_mask()`.

Here is the call graph for this function:



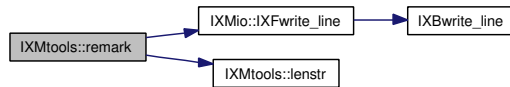
**5.72.1.27** subroutine `IXMtools::remark` (`character(len=*)`, `intent(in) string`)

Definition at line 77 of file `IXMtools.f90`.

References `IXMio::IXFwrite_line()`, `lenstr()`, and `NXUmodule::status`.

Referenced by `read_line()`.

Here is the call graph for this function:



**5.72.1.28** `integer(i4b) IXMtools::shutfl` (`integer(i4b)`, `intent(in) iunit`)

Definition at line 56 of file `IXMtools.f90`.

Referenced by `IXMmask::IXFread_mask()`.

**5.72.1.29** subroutine `IXMtools::unitno` (`integer(i4b)`, `intent(out) iunit`)

Definition at line 32 of file `IXMtools.f90`.

Referenced by `IXMmask::IXFread_mask()`.

**5.72.1.30** subroutine `IXMtools::upcase` (`character(len=*)`, `intent(inout) string`)

Definition at line 500 of file `IXMtools.f90`.



## 5.72.2 Variable Documentation

### 5.72.2.1 integer(i4b),parameter IXMtools::eof = -101\_i4b

Definition at line 21 of file IXMtools.f90.

### 5.72.2.2 integer(i4b),parameter IXMtools::err = -100\_i4b

Definition at line 21 of file IXMtools.f90.

Referenced by getlf().

### 5.72.2.3 integer(i4b),parameter IXMtools::new = 1102\_i4b

Definition at line 23 of file IXMtools.f90.

### 5.72.2.4 character(len=2),parameter IXMtools::numeric\_list\_terminator = '

Definition at line 25 of file IXMtools.f90.

### 5.72.2.5 integer(i4b),parameter IXMtools::ok = 0\_i4b

Definition at line 21 of file IXMtools.f90.

### 5.72.2.6 integer(i4b),parameter IXMtools::old = 1101\_i4b

Definition at line 23 of file IXMtools.f90.

### 5.72.2.7 integer(i4b),parameter IXMtools::oldnew = 1103\_i4b

Definition at line 23 of file IXMtools.f90.

### 5.72.2.8 integer(i4b),parameter IXMtools::read = 1001\_i4b

Definition at line 22 of file IXMtools.f90.

### 5.72.2.9 integer(i4b),parameter IXMtools::readwr = 1002\_i4b

Definition at line 22 of file IXMtools.f90.

### 5.72.2.10 integer(i4b),parameter IXMtools::stdin = -5\_i4b

Definition at line 20 of file IXMtools.f90.

### 5.72.2.11 integer(i4b),parameter IXMtools::stdout = -6\_i4b

Definition at line 20 of file IXMtools.f90.

**5.72.2.12** `character(len=4),parameter IXMtools::trail_space =  
 achar(9)//achar(32)//achar(0)//achar(13)`

Definition at line 24 of file IXMtools.f90.

Referenced by `inext()`, and `lenstr()`.

**5.72.2.13** `integer(i4b),parameter IXMtools::warn = -1_i4b`

Definition at line 21 of file IXMtools.f90.

## 5.73 IXMtranslation Namespace Reference

### Classes

- struct **IXTtranslation**
- interface operator
- interface **IXFdot**
- interface **IXFnorm**
- interface **IXFcross**

### Functions

- subroutine **IXFdestroy\_translation** (arg, status)
- subroutine **IXFoperation\_run\_translation** (op, field, arg, status)
- subroutine **IXFset\_translation** (self, status, vector, ref)
- subroutine **IXFget\_translation** (self, status, vector, wout)
- subroutine **IXFcreate\_translation** (self, status, vector)
- subroutine **IXFcheck\_translation** (translation, status)
- type(**IXTtranslation**) **IXFtt\_plus\_op\_translation** (t1, t2)
- type(**IXTtranslation**) **IXFtv\_plus\_op\_translation** (t, v)
- type(**IXTtranslation**) **IXFvt\_plus\_op\_translation** (v, t)
- type(**IXTtranslation**) **IXFtt\_minus\_op\_translation** (t1, t2)
- type(**IXTtranslation**) **IXFtv\_minus\_op\_translation** (t, v)
- type(**IXTtranslation**) **IXFvt\_minus\_op\_translation** (v, t)
- real(dp) **IXFnorm\_translation** (t)
- real(dp) **IXFdot\_translation** (t1, t2)
- type(**IXTtranslation**) **IXFcross\_translation** (t1, t2)
- type(**IXTtranslation**) **IXFmatmul\_translation** (rotmat, t)
- real(dp), dimension(3) **IXFs2sprime\_translation** (rotmat, t, v)
- real(dp), dimension(3) **IXFsprime2s\_translation** (rotmat, t, vprime)

### 5.73.1 Function Documentation

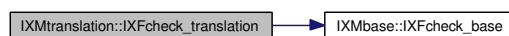
#### 5.73.1.1 subroutine **IXMtranslation::IXFcheck\_translation** (type(**IXTtranslation**) *translation*, type(**IXTstatus**) *status*)

Definition at line 172 of file `IXMtranslation.f90`.

References `IXMbase::IXFcheck_base()`, and `NXUmodule::status`.

Referenced by `IXMgeometry::IXFcheck_geometry()`, and `IXFset_translation()`.

Here is the call graph for this function:

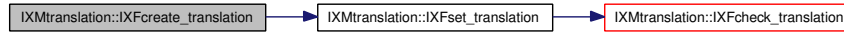


**5.73.1.2** subroutine `IXMtranslation::IXFcreate_translation`  
 (`type(IXTtranslation),intent(out) self`, `type(IXTstatus) status`,  
`real(dp),dimension(3) ,intent(in) vector`)

Definition at line 158 of file `IXMtranslation.f90`.

References `IXFset_translation()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.73.1.3** `type(IXTtranslation)` `IXMtranslation::IXFcross_translation`  
 (`type(IXTtranslation),intent(in) t1`, `type(IXTtranslation),intent(in) t2`)

Definition at line 239 of file `IXMtranslation.f90`.

**5.73.1.4** subroutine `IXMtranslation::IXFdestroy_translation` (`type(IXTtranslation) arg`, `type(IXTstatus) status`)

Definition at line 68 of file `IXMtranslation.f90`.

References `NXUmodule::status`.

**5.73.1.5** `real(dp)` `IXMtranslation::IXFdot_translation`  
 (`type(IXTtranslation),intent(in) t1`, `type(IXTtranslation),intent(in) t2`)

Definition at line 233 of file `IXMtranslation.f90`.

**5.73.1.6** subroutine `IXMtranslation::IXFget_translation`  
 (`type(IXTtranslation),intent(in) self`, `type(IXTstatus),intent(inout) status`,  
`real(dp),dimension(3) ,intent(out),optional vector`,  
`type(IXTtranslation),intent(out),optional wout`)

Definition at line 138 of file `IXMtranslation.f90`.

References `NXUmodule::status`.

Referenced by `IXMgeometry::IXFarea_vertices_geometry()`, and `IXMgeometry::IXFprojarea_vertices_geometry()`.

**5.73.1.7** `type(IXTtranslation)` `IXMtranslation::IXFmatmul_translation` (`real(dp),dimension(3,3) ,intent(in) rotmat`,  
`type(IXTtranslation),intent(in) t`)

Definition at line 249 of file `IXMtranslation.f90`.

Referenced by `IXMorientation::IXFcombine_orientation()`, and `IXMorientation::IXFdifference_orientation()`.

**5.73.1.8** `real(dp)` `IXMtranslation::IXFnorm_translation`  
 (type(`IXTtranslation`),intent(in) *t*)

Definition at line 227 of file `IXMtranslation.f90`.

**5.73.1.9** `subroutine IXMtranslation::IXFoperation_run_translation`  
 (type(`IXToperation`) *op*, character(len=\*) *field*, type(`IXTtranslation`) *arg*,  
 type(`IXTstatus`) *status*)

Definition at line 75 of file `IXMtranslation.f90`.

References `NXUmodule::status`.

**5.73.1.10** `real(dp),dimension(3)` `IXMtranslation::IXFs2sprime_ -`  
`translation` (`real(dp),dimension(3,3),intent(in)` *rotmat*,  
 type(`IXTtranslation`),intent(in) *t*, `real(dp),dimension(3),intent(in)` *v*)

Definition at line 257 of file `IXMtranslation.f90`.

Referenced by `IXMorientation::IXFs2sprime_orientation()`.

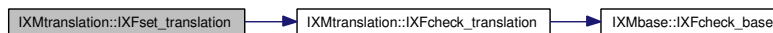
**5.73.1.11** `subroutine IXMtranslation::IXFset_translation`  
 (type(`IXTtranslation`),intent(inout) *self*, type(`IXTstatus`)  
*status*, `real(dp),dimension(3)` ,intent(in),optional *vector*,  
 type(`IXTtranslation`),intent(in),optional *ref*)

Definition at line 100 of file `IXMtranslation.f90`.

References `IXFcheck_translation()`, and `NXUmodule::status`.

Referenced by `IXMgeometry::IXFcreate_attributes_geometry()`, `IXFcreate_translation()`, and `IXMgeometry::IXFset_geometry()`.

Here is the call graph for this function:



**5.73.1.12** `real(dp),dimension(3)` `IXMtranslation::IXFsprime2s_ -`  
`translation` (`real(dp),dimension(3,3),intent(in)` *rotmat*,  
 type(`IXTtranslation`),intent(in) *t*, `real(dp),dimension(3),intent(in)`  
*vprime*)

Definition at line 265 of file `IXMtranslation.f90`.

Referenced by `IXMorientation::IXFsprime2s_orientation()`.

**5.73.1.13** `type(IXTtranslation)` `IXMtranslation::IXFtt_minus_op_translation`  
 (type(`IXTtranslation`),intent(in) *t1*, type(`IXTtranslation`),intent(in) *t2*)

Definition at line 206 of file `IXMtranslation.f90`.

**5.73.1.14** `type(IXTtranslation) IXMtranslation::IXFtt_plus_op_translation`  
`(type(IXTtranslation),intent(in) t1, type(IXTtranslation),intent(in) t2)`

Definition at line 185 of file IXMtranslation.f90.

**5.73.1.15** `type(IXTtranslation) IXMtranslation::IXFtv_minus_op_translation`  
`(type(IXTtranslation),intent(in) t, real(dp),dimension(3),intent(in) v)`

Definition at line 212 of file IXMtranslation.f90.

**5.73.1.16** `type(IXTtranslation) IXMtranslation::IXFtv_plus_op_translation`  
`(type(IXTtranslation),intent(in) t, real(dp),dimension(3),intent(in) v)`

Definition at line 191 of file IXMtranslation.f90.

**5.73.1.17** `type(IXTtranslation) IXMtranslation::IXFvt_minus_op_translation`  
`(real(dp),dimension(3),intent(in) v, type(IXTtranslation),intent(in) t)`

Definition at line 219 of file IXMtranslation.f90.

**5.73.1.18** `type(IXTtranslation) IXMtranslation::IXFvt_plus_op_translation`  
`(real(dp),dimension(3),intent(in) v, type(IXTtranslation),intent(in) t)`

Definition at line 198 of file IXMtranslation.f90.

## 5.74 IXMtype\_ definitions Namespace Reference

### Variables

- integer, parameter `i4b` = `selected_int_kind(9)`
- integer, parameter `i2b` = `selected_int_kind(4)`
- integer, parameter `i1b` = `selected_int_kind(2)`
- integer, parameter `sp` = `kind(1.0)`
- integer, parameter `dp` = `kind(1.0d0)`
- integer, parameter `spc` = `kind((1.0`
- integer, parameter `dpc` = `kind((1.0d0`
- integer, parameter `d0`
- integer, parameter `lgt` = `kind(.true.)`
- real(sp), parameter `pi_sp` = `3.141592653589793238462643383279502884197_sp`
- real(sp), parameter `pio2_sp` = `1.57079632679489661923132169163975144209858_sp`
- real(sp), parameter `twopi_sp` = `6.283185307179586476925286766559005768394_sp`
- real(sp), parameter `fourpi_sp` = `12.56637061435917295385057353311801153679_sp`
- real(sp), parameter `sqrt2_sp` = `1.41421356237309504880168872420969807856967_sp`
- real(sp), parameter `euler_sp` = `0.5772156649015328606065120900824024310422_sp`
- real(sp), parameter `deg_to_rad_sp` = `0.01745329251994329576923690768488612713443_sp`
- real(sp), parameter `rad_to_deg_sp` = `57.29577951308232087679815481410517033241_sp`
- real(dp), parameter `pi_dp` = `3.141592653589793238462643383279502884197_dp`
- real(dp), parameter `pio2_dp` = `1.57079632679489661923132169163975144209858_dp`
- real(dp), parameter `twopi_dp` = `6.283185307179586476925286766559005768394_dp`
- real(dp), parameter `fourpi_dp` = `12.56637061435917295385057353311801153679_dp`
- real(dp), parameter `sqrt2_dp` = `1.41421356237309504880168872420969807856967_dp`
- real(dp), parameter `euler_dp` = `0.5772156649015328606065120900824024310422_dp`
- real(dp), parameter `deg_to_rad_dp` = `0.01745329251994329576923690768488612713443_dp`
- real(dp), parameter `rad_to_deg_dp` = `57.29577951308232087679815481410517033241_dp`
- real(sp), parameter `null_sp` = `-1.0e30`
- real(dp), parameter `null_dp` = `-1.0d30`
- real(sp), parameter `epsilon_sp` = `epsilon(1.0_sp)`
- real(dp), parameter `epsilon_dp` = `epsilon(1.0_dp)`
- integer(i4b), parameter `name_len` = `256`
- integer(i4b), parameter `long_len` = `256`
- integer(i4b), parameter `short_len` = `32`

- `real(dp)`, parameter `IXCundef_dp = 0.0_dp / 0.0_dp`
- `real(sp)`, parameter `IXCundef_sp = 0.0_sp / 0.0_sp`
- `integer(i4b)`, parameter `IXCundef_i4b = 0`
- `logical(i4b)`, parameter `IXCundef_logical = .false.`
- `character(len=*)`, parameter `IXCundef_char = 'undefined'`

### 5.74.1 Variable Documentation

#### 5.74.1.1 `integer,parameter IXMtype_definitions::d0`

Definition at line 14 of file `IXMtype_definitions.f90`.

Referenced by `IXMefficiency::EFF()`, `IXMefficiency::EFFCHB()`, and `IXMdetector::IXFpopulate_detector()`.

#### 5.74.1.2 `real(dp),parameter IXMtype_definitions::deg_to_rad_dp = 0.01745329251994329576923690768488612713443_dp`

Definition at line 34 of file `IXMtype_definitions.f90`.

#### 5.74.1.3 `real(sp),parameter IXMtype_definitions::deg_to_rad_sp = 0.01745329251994329576923690768488612713443_sp`

Definition at line 25 of file `IXMtype_definitions.f90`.

#### 5.74.1.4 `integer,parameter IXMtype_definitions::dp = kind(1.0d0)`

Definition at line 12 of file `IXMtype_definitions.f90`.

Referenced by `IXMwrapped_var::f_wrap_dp()`, `IXMwrapped_var::unwrap_dp()`, and `IXMwrapped_var::wrap_dp()`.

#### 5.74.1.5 `integer,parameter IXMtype_definitions::dpc = kind((1.0d0`

Definition at line 14 of file `IXMtype_definitions.f90`.

#### 5.74.1.6 `real(dp),parameter IXMtype_definitions::epsilon_dp = epsilon(1.0_dp)`

Definition at line 41 of file `IXMtype_definitions.f90`.

#### 5.74.1.7 `real(sp),parameter IXMtype_definitions::epsilon_sp = epsilon(1.0_sp)`

Definition at line 40 of file `IXMtype_definitions.f90`.

#### 5.74.1.8 `real(dp),parameter IXMtype_definitions::euler_dp = 0.5772156649015328606065120900824024310422_dp`

Definition at line 33 of file `IXMtype_definitions.f90`.



**5.74.1.9** `real(sp),parameter IXMtype_definitions::euler_sp =  
0.5772156649015328606065120900824024310422_sp`

Definition at line 24 of file IXMtype\_definitions.f90.

**5.74.1.10** `real(dp),parameter IXMtype_definitions::fourpi_dp =  
12.56637061435917295385057353311801153679_dp`

Definition at line 31 of file IXMtype\_definitions.f90.

Referenced by IXMfermi\_chopper::IXFtransmission\_gen\_fermi\_chopper(), and IXMfermi\_chopper::IXFvariance\_gen\_fermi\_chopper().

**5.74.1.11** `real(sp),parameter IXMtype_definitions::fourpi_sp =  
12.56637061435917295385057353311801153679_sp`

Definition at line 22 of file IXMtype\_definitions.f90.

**5.74.1.12** `integer,parameter IXMtype_definitions::i1b = selected_int_kind(2)`

Definition at line 10 of file IXMtype\_definitions.f90.

**5.74.1.13** `integer,parameter IXMtype_definitions::i2b = selected_int_kind(4)`

Definition at line 9 of file IXMtype\_definitions.f90.

**5.74.1.14** `integer,parameter IXMtype_definitions::i4b = selected_int_kind(9)`

Definition at line 8 of file IXMtype\_definitions.f90.

**5.74.1.15** `character(len=*),parameter IXMtype_definitions::IXCundef_char =  
'undefined'`

Definition at line 50 of file IXMtype\_definitions.f90.

**5.74.1.16** `real(dp),parameter IXMtype_definitions::IXCundef_dp = 0.0_dp /  
0.0_dp`

Definition at line 46 of file IXMtype\_definitions.f90.

Referenced by IXMdiffraction\_instrument::get\_emode(), IXMisis\_raw\_file::IXFget\_dp(), IXMisis\_raw\_file::IXFget\_dp1(), and IXMisis\_raw\_file::IXFget\_dp2().

**5.74.1.17** `integer(i4b),parameter IXMtype_definitions::IXCundef_i4b = 0`

Definition at line 48 of file IXMtype\_definitions.f90.

**5.74.1.18** `logical(i4b),parameter IXMtype_definitions::IXCundef_logical = .false.`

Definition at line 49 of file IXMtype\_definitions.f90.

**5.74.1.19** `real(sp),parameter IXMtype_definitions::IXCundef_sp = 0.0_sp /  
0.0_sp`

Definition at line 47 of file IXMtype\_definitions.f90.

Referenced by IXMisis\_raw\_file::IXFget\_dp(), IXMisis\_raw\_file::IXFget\_dp1(), IXMisis\_raw\_file::IXFget\_dp2(), IXMisis\_raw\_file::IXFget\_real(), IXMisis\_raw\_file::IXFget\_real1(), and IXMisis\_raw\_file::IXFget\_real2().

**5.74.1.20** `integer,parameter IXMtype_definitions::lgt = kind(.true.)`

Definition at line 15 of file IXMtype\_definitions.f90.

**5.74.1.21** `integer(i4b),parameter IXMtype_definitions::long_len = 256`

Definition at line 43 of file IXMtype\_definitions.f90.

**5.74.1.22** `integer(i4b),parameter IXMtype_definitions::name_len = 256`

Definition at line 42 of file IXMtype\_definitions.f90.

**5.74.1.23** `real(dp),parameter IXMtype_definitions::null_dp = -1.0d30`

Definition at line 38 of file IXMtype\_definitions.f90.

**5.74.1.24** `real(sp),parameter IXMtype_definitions::null_sp = -1.0e30`

Definition at line 37 of file IXMtype\_definitions.f90.

**5.74.1.25** `real(dp),parameter IXMtype_definitions::pi_dp =  
3.141592653589793238462643383279502884197_dp`

Definition at line 28 of file IXMtype\_definitions.f90.

Referenced by IXMefficiency::EFF(), IXMshape::IXFsolid\_angle\_sphere(), IXMshape::IXFvolume\_cylinder(), IXMshape::IXFvolume\_holcyl(), and IXMshape::IXFvolume\_sphere().

**5.74.1.26** `real(sp),parameter IXMtype_definitions::pi_sp =  
3.141592653589793238462643383279502884197_sp`

Definition at line 19 of file IXMtype\_definitions.f90.

**5.74.1.27** `real(dp),parameter IXMtype_definitions::pio2_dp =  
1.57079632679489661923132169163975144209858_dp`

Definition at line 29 of file IXMtype\_definitions.f90.

**5.74.1.28** `real(sp),parameter IXMtype_definitions::pio2_sp =  
1.57079632679489661923132169163975144209858_sp`

Definition at line 20 of file IXMtype\_definitions.f90.

**5.74.1.29** `real(dp),parameter IXMtype_definitions::rad_to_deg_dp =  
57.29577951308232087679815481410517033241_dp`

Definition at line 35 of file IXMtype\_definitions.f90.

**5.74.1.30** `real(sp),parameter IXMtype_definitions::rad_to_deg_sp =  
57.29577951308232087679815481410517033241_sp`

Definition at line 26 of file IXMtype\_definitions.f90.

**5.74.1.31** `integer(i4b),parameter IXMtype_definitions::short_len = 32`

Definition at line 44 of file IXMtype\_definitions.f90.

**5.74.1.32** `integer,parameter IXMtype_definitions::sp = kind(1.0)`

Definition at line 11 of file IXMtype\_definitions.f90.

**5.74.1.33** `integer,parameter IXMtype_definitions::spc = kind((1.0`

Definition at line 13 of file IXMtype\_definitions.f90.

**5.74.1.34** `real(dp),parameter IXMtype_definitions::sqrt2_dp =  
1.41421356237309504880168872420969807856967_dp`

Definition at line 32 of file IXMtype\_definitions.f90.

**5.74.1.35** `real(sp),parameter IXMtype_definitions::sqrt2_sp =  
1.41421356237309504880168872420969807856967_sp`

Definition at line 23 of file IXMtype\_definitions.f90.

**5.74.1.36** `real(dp),parameter IXMtype_definitions::twopi_dp =  
6.283185307179586476925286766559005768394_dp`

Definition at line 30 of file IXMtype\_definitions.f90.

Referenced by IXMshape::IXFarea\_vertices\_sphere().

**5.74.1.37** `real(sp),parameter IXMtype_definitions::twopi_sp =  
6.283185307179586476925286766559005768394_sp`

Definition at line 21 of file IXMtype\_definitions.f90.

## 5.75 IXMunits Namespace Reference

### Classes

- struct **IXTunits**

### Functions

- subroutine **IXFoperation\_run\_units** (*op*, *field*, *arg*, *status*)
- logical **IXFcompare\_units** (*u1*, *u2*)
- subroutine **IXFcreate\_units** (*arg*, *code*, *units*, *status*)
- subroutine **IXFcreate\_code\_units** (*arg*, *code*, *status*)
- subroutine **IXFcreate\_full\_units** (*arg*, *code*, *units*, *status*)
- subroutine **IXFmake\_label\_units** (*x\_unit*, *s\_unit*, *x\_dist*, *x\_label*, *s\_label*, *status*)
- subroutine **IXFset\_units** (*arg*, *status*, *code*, *units*, *ref*)
- subroutine **IXFget\_units** (*arg*, *status*, *code*, *units*, *wout*)
- subroutine **IXFcheck\_units** (*units*, *status*)
- subroutine **IXFdestroy\_units** (*units*, *status*)

### 5.75.1 Function Documentation

**5.75.1.1** subroutine **IXMunits::IXFcheck\_units** (*type*(IXTunits) *units*, *type*(IXTstatus) *status*)

Definition at line 219 of file IXMunits.f90.

**5.75.1.2** logical **IXMunits::IXFcompare\_units** (*type*(IXTunits),*intent*(in) *u1*, *type*(IXTunits),*intent*(in) *u2*)

Definition at line 46 of file IXMunits.f90.

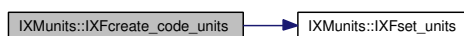
Referenced by IXMdataset\_1d::IXFunits\_dataset\_1d(), and IXMdataset\_1d::setup\_binary\_op\_dataset\_1d().

**5.75.1.3** subroutine **IXMunits::IXFcreate\_code\_units** (*type*(IXTunits),*intent*(out) *arg*, *character*(*len*=\*),*intent*(in) *code*, *type*(IXTstatus) *status*)

Definition at line 72 of file IXMunits.f90.

References IXMneutron\_units::code\_list, IXFset\_units(), IXMneutron\_units::list\_len, and NXUmodule::status.

Here is the call graph for this function:



**5.75.1.4** subroutine `IXMunits::IXFcreate_full_units` (`type(IXTunits),intent(out) arg`, `character(len=*)`, `intent(in) code`, `character(len=*)`, `intent(in) units`, `type(IXTstatus) status`)

Definition at line 102 of file `IXMunits.f90`.

References `IXMneutron_units::code_list`, `IXFset_units()`, `IXMneutron_units::list_len`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.75.1.5** subroutine `IXMunits::IXFcreate_units` (`type(IXTunits),intent(out) arg`, `character(len=*) code`, `character(len=*) units`, `type(IXTstatus) status`)

Definition at line 59 of file `IXMunits.f90`.

References `IXFset_units()`, and `NXUmodule::status`.

Referenced by `IXMdataset_1d::IXFcreatexye_dataset_1d()`.

Here is the call graph for this function:



**5.75.1.6** subroutine `IXMunits::IXFdestroy_units` (`type(IXTunits) units`, `type(IXTstatus) status`)

Definition at line 225 of file `IXMunits.f90`.

References `NXUmodule::status`.

**5.75.1.7** subroutine `IXMunits::IXFget_units` (`type(IXTunits),intent(in) arg`, `type(IXTstatus) status`, `character(len=*)`, `intent(out),optional code`, `character(len=*)`, `intent(out),optional units`, `type(IXTunits),intent(out),optional wout`)

Definition at line 205 of file `IXMunits.f90`.

References `NXUmodule::status`.

Referenced by `IXMdataset_1d::IXFunits_dataset_1d()`.

**5.75.1.8** subroutine `IXMunits::IXFmake_label_units` (`type(IXTunits),intent(in) x_unit`, `type(IXTunits),intent(in) s_unit`, `logical,intent(in) x_dist`, `character(len=long_len),intent(out) x_label`, `character(len=long_len),intent(out) s_label`, `type(IXTstatus) status`)

Definition at line 137 of file `IXMunits.f90`.

References IXMneutron\_units::cap\_list, IXMneutron\_units::code\_list, and IXMneutron\_units::list\_len.

Referenced by IXMdataset\_1d::IXFmake\_label\_dataset\_1d().

**5.75.1.9 subroutine IXMunits::IXFoperation\_run\_units (type(IXToperation) *op*, character(len=\*) *field*, type(IXTunits) *arg*, type(IXTstatus) *status*)**

Definition at line 31 of file IXMunits.f90.

References NXUmodule::status.

**5.75.1.10 subroutine IXMunits::IXFset\_units (type(IXTunits),intent(inout) *arg*, type(IXTstatus) *status*, character(len=\*),intent(in),optional *code*, character(len=\*),intent(in),optional *units*, type(IXTunits),intent(in),optional *ref*)**

Definition at line 174 of file IXMunits.f90.

References NXUmodule::status.

Referenced by IXFcreate\_code\_units(), IXFcreate\_full\_units(), IXFcreate\_units(), and IXMdataset\_1d::IXFset\_dataset\_1d().

## 5.76 IXMunits\_\_utils Namespace Reference

### Functions

- subroutine `IXFunits_get_len_arr` (`units_in`, `x_in`, `units_out`, `emode`, `delta`, `x1`, `x2`, `twotheta`, `efix`, `ilo`, `ihi`, `ctot`, `gtot`, `sgn_in`, `shift_in`, `qopt_in`, `sgn_out`, `shift_out`, `qopt_out`, `status`)
- subroutine `IXFunits_convert` (`xin`, `yin`, `ein`, `emode`, `twotheta`, `efix`, `dist_in`, `ilo`, `ihi`, `ctot`, `gtot`, `sgn_in`, `shift_in`, `qopt_in`, `sgn_out`, `shift_out`, `qopt_out`, `xout`, `yout`, `eout`, `status`)
- integer(i4b) `units_check_parameters` (`emode`, `delta`, `x1`, `x2`, `twotheta`, `efix`)
- integer(i4b), parameter `units_check_codes` (`emode`, `units_in`, `units_out`)
- integer(i4b), parameter `units_xconvert` (`xin`, `ilo`, `ihi`, `ctot`, `gtot`, `sgn_in`, `shift_in`, `sgn_out`, `shift_out`, `xout`)
- integer(i4b), parameter `units_composite_coefficients` (`emode`, `delta`, `x1`, `x2`, `twotheta`, `efix`, `a_in`, `b_in`, `g_in`, `c_in`, `a_out`, `b_out`, `g_out`, `c_out`, `ctot`, `gtot`)
- integer(i4b), parameter `units_coefficients` (`units`, `emode`, `delta`, `x1`, `x2`, `twotheta`, `efix`, `units_parsed`, `a`, `b`, `g`, `c`, `sgn`, `shift`, `qopt`)

### Variables

- integer(i4b), parameter `ok = 0_i4b`
- integer(i4b), parameter `warn = -1_i4b`
- integer(i4b), parameter `err = -100_i4b`
- integer(i4b), parameter `eof = -101_i4b`

### 5.76.1 Function Documentation

5.76.1.1 subroutine `IXMunits__utils::IXFunits_convert`  
 (`real(dp),dimension(:),intent(in) xin`, `real(dp),dimension(:),intent(in) yin`, `real(dp),dimension(:),intent(in) ein`, `integer(i4b),intent(in) emode`, `real(dp),intent(in) twotheta`, `real(dp),intent(in) efix`, `logical,intent(in) dist_in`, `integer(i4b),intent(in) ilo`, `integer(i4b),intent(in) ihi`, `real(dp),intent(in) ctot`, `real(dp),intent(in) gtot`, `integer(i4b),intent(in) sgn_in`, `real(dp),intent(in) shift_in`, `integer(i4b),intent(in) qopt_in`, `integer(i4b),intent(in) sgn_out`, `real(dp),intent(in) shift_out`, `integer(i4b),intent(in) qopt_out`, `real(dp),dimension(:),intent(out) xout`, `real(dp),dimension(:),intent(out) yout`, `real(dp),dimension(:),intent(out) eout`, `type(IXTstatus) status`)

Definition at line 172 of file `IXMunits__utils.f90`.

References `IXMstatus::IXCseverity_error`, `NXUmodule::status`, and `units_xconvert()`.

Referenced by `IXMdataset__1d::IXFunits__dataset__1d()`.

Here is the call graph for this function:





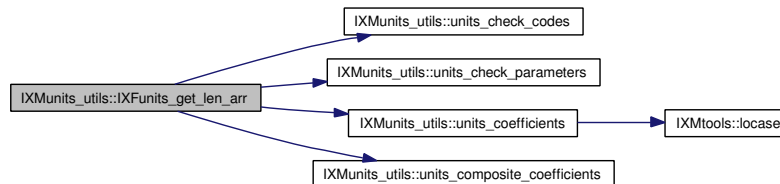
**5.76.1.2** subroutine `IXMunits_utils::IXFunits_get_len_arr`  
 (character(len=\*),intent(in) *units\_in*, real(dp),dimension(:),intent(in) *x\_in*, character(len=\*),intent(in) *units\_out*, integer(i4b),dimension(ixfunits\_get\_len\_arr),intent(in),parameter *emode*, real(dp),intent(in),parameter *delta*, real(dp),intent(in),parameter *x1*, real(dp),intent(in),parameter *x2*, real(dp),intent(in),parameter *twotheta*, real(dp),dimension(ixfunits\_get\_len\_arr),intent(in),parameter *efix*, integer(i4b),intent(out) *ilo*, integer(i4b),intent(out) *ihi*, real(dp),intent(out) *ctot*, real(dp),intent(out) *gtot*, integer(i4b),intent(out) *sgn\_in*, real(dp),intent(out) *shift\_in*, integer(i4b),intent(out) *qopt\_in*, integer(i4b),intent(out) *sgn\_out*, real(dp),intent(out) *shift\_out*, integer(i4b),intent(out) *qopt\_out*, type(IXTstatus) *status*)

Definition at line 24 of file `IXMunits_utils.f90`.

References `IXMstatus::IXCseverity_error`, `NXUmodule::status`, `units_check_codes()`, `units_check_parameters()`, `units_coefficients()`, and `units_composite_coefficients()`.

Referenced by `IXMdataset_1d::IXFunits_dataset_1d()`.

Here is the call graph for this function:



**5.76.1.3** integer(i4b),parameter `IXMunits_utils::units_check_codes`  
 (integer(i4b),intent(in) *emode*, character(len=\*),intent(in) *units\_in*, character(len=\*),intent(in) *units\_out*)

Definition at line 363 of file `IXMunits_utils.f90`.

References `IXMneutron_units::n_0`, `IXMneutron_units::n_1`, `IXMneutron_units::n_2`, `IXMneutron_units::u_0`, `IXMneutron_units::u_1`, and `IXMneutron_units::u_2`.

Referenced by `IXFunits_get_len_arr()`.

**5.76.1.4** integer(i4b) `IXMunits_utils::units_check_parameters`  
 (integer(i4b),intent(in) *emode*, real(dp),intent(in) *delta*, real(dp),intent(in) *x1*, real(dp),intent(in) *x2*, real(dp),intent(in) *twotheta*, real(dp),intent(in) *efix*)

Definition at line 330 of file `IXMunits_utils.f90`.

Referenced by `IXFunits_get_len_arr()`.

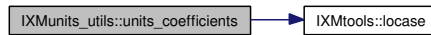
**5.76.1.5** `integer(i4b),parameter IXMunits_utils::units_coefficients`  
 (`character(*)`,`intent(in) units`, `integer(i4b)`,`intent(in) emode`,  
`real(dp)`,`intent(in) delta`, `real(dp)`,`intent(in) x1`, `real(dp)`,`intent(in)`  
`x2`, `real(dp)`,`intent(in) twotheta`, `real(dp)`,`intent(in) efix`,  
`character(4)`,`intent(out) units_parsed`, `real(dp)`,`intent(out) a`,  
`real(dp)`,`intent(out) b`, `real(dp)`,`intent(out) g`, `real(dp)`,`intent(out)`  
`c`, `integer(i4b)`,`intent(out) sgn`, `real(dp)`,`intent(out) shift`,  
`integer(i4b)`,`intent(out) qopt`)

Definition at line 569 of file IXMunits\_utils.f90.

References `IXMneutron_units::a_0`, `IXMneutron_units::b_0`, `IXMneutron_units::b_1`,  
`IXMneutron_units::b_2`, `IXMneutron_units::c_0`, `IXMneutron_units::c_1`, `IXMneutron_`  
`units::c_2`, `IXMneutron_units::g_0`, `IXMneutron_units::g_1`, `IXMneutron_units::g_`  
`2`, `IXMtools::locase()`, `IXMneutron_units::n_0`, `IXMneutron_units::n_1`, `IXMneutron_`  
`units::n_2`, `IXMneutron_units::qopt_1`, `IXMneutron_units::qopt_2`, `IXMneutron_units::u_0`,  
`IXMneutron_units::u_1`, and `IXMneutron_units::u_2`.

Referenced by `IXFunits_get_len_arr()`.

Here is the call graph for this function:



**5.76.1.6** `integer(i4b),parameter IXMunits_utils::units_composite_coefficients`  
 (`integer(i4b)`,`intent(in) emode`, `real(dp)`,`intent(in) delta`, `real(dp)`,`intent(in)`  
`x1`, `real(dp)`,`intent(in) x2`, `real(dp)`,`intent(in) twotheta`, `real(dp)`,`intent(in)`  
`efix`, `real(dp)`,`intent(in) a_in`, `real(dp)`,`intent(in) b_in`, `real(dp)`,`intent(in)`  
`g_in`, `real(dp)`,`intent(in) c_in`, `real(dp)`,`intent(in) a_out`,  
`real(dp)`,`intent(in) b_out`, `real(dp)`,`intent(in) g_out`, `real(dp)`,`intent(in)`  
`c_out`, `real(dp)`,`intent(out) ctot`, `real(dp)`,`intent(out) gtot`)

Definition at line 519 of file IXMunits\_utils.f90.

Referenced by `IXFunits_get_len_arr()`.

**5.76.1.7** `integer(i4b),parameter IXMunits_utils::units_xconvert`  
 (`real(dp)`,`dimension(:)`,`intent(in) xin`, `integer(i4b)`,`intent(in) ilo`,  
`integer(i4b)`,`intent(in) ihi`, `real(dp)`,`intent(in) ctot`, `real(dp)`,`intent(in)`  
`gtot`, `integer(i4b)`,`intent(in) sgn_in`, `real(dp)`,`intent(in) shift_in`,  
`integer(i4b)`,`intent(in) sgn_out`, `real(dp)`,`intent(in) shift_out`,  
`real(dp)`,`dimension(:)`,`intent(out) xout`)

Definition at line 411 of file IXMunits\_utils.f90.

Referenced by `IXFunits_convert()`.

## 5.76.2 Variable Documentation

**5.76.2.1** `integer(i4b),parameter IXMunits_utils::eof = -101_i4b`

Definition at line 14 of file IXMunits\_utils.f90.

**5.76.2.2 integer(i4b),parameter IXMunits\_utils::err = -100\_i4b**

Definition at line 14 of file IXMunits\_utils.f90.

Referenced by IXMdataset\_1d::IXFintegrate\_dataset\_1d().

**5.76.2.3 integer(i4b),parameter IXMunits\_utils::ok = 0\_i4b**

Definition at line 14 of file IXMunits\_utils.f90.

**5.76.2.4 integer(i4b),parameter IXMunits\_utils::warn = -1\_i4b**

Definition at line 14 of file IXMunits\_utils.f90.

## 5.77 IXMunspike Namespace Reference

### Functions

- subroutine `IXFunspike_1d` (`status`, `x_in`, `y_in`, `e_in`, `y_out`, `e_out`, `ymin`, `ymax`, `fac`, `sfac`, `nbad`)

### 5.77.1 Function Documentation

**5.77.1.1** subroutine `IXMunspike::IXFunspike_1d` (`type(IXTstatus)`,`intent(inout)` `status`, `real(dp)`,`dimension(:)` ,`intent(in)` `x_in`, `real(dp)`,`dimension(:)` ,`intent(in)` `y_in`, `real(dp)`,`dimension(:)` ,`intent(in)` `e_in`, `real(dp)`,`dimension(:)` ,`intent(out)` `y_out`, `real(dp)`,`dimension(:)` ,`intent(out)` `e_out`, `real(dp)`,`intent(in)`,`optional` `ymin`, `real(dp)`,`intent(in)`,`optional` `ymax`, `real(dp)`,`intent(in)`,`optional` `fac`, `real(dp)`,`intent(in)`,`optional` `sfac`, `integer(i4b)`,`intent(out)`,`optional` `nbad`)

Definition at line 15 of file `IXMunspike.f90`.

Referenced by `IXMdataset_2d::IXFmoments_dataset_2d()`, `IXMdataset_1d::IXFunspike_dataset_1d()`, and `IXMdataset_2d::IXFunspike_dataset_2d()`.

## 5.78 IXMuser Namespace Reference

### Classes

- struct `IXTuser`

### Functions

- subroutine `IXFoperation_run_user` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcreate_user` (`user`, `name`, `affiliation`, `address`, `telephone`, `fax`, `email`, `status`)
- subroutine `IXFset_user` (`user`, `status`, `name`, `affiliation`, `address`, `telephone`, `fax`, `email`, `ref`)
- subroutine `IXFget_user` (`user`, `status`, `name`, `affiliation`, `address`, `telephone`, `fax`, `email`, `wout`)
- subroutine `IXFcheck_user` (`user`, `status`)
- subroutine `IXFdestroy_user` (`user`, `status`)

### 5.78.1 Function Documentation

#### 5.78.1.1 subroutine `IXMuser::IXFcheck_user` (`type(IXTuser) user`, `type(IXTstatus) status`)

Definition at line 145 of file `IXMuser.f90`.

References `IXMbase::IXFcheck_base()`, and `NXUmodule::status`.

Referenced by `IXFset_user()`.

Here is the call graph for this function:



#### 5.78.1.2 subroutine `IXMuser::IXFcreate_user` (`type(IXTuser),intent(out) user`, `character(len=*) ,intent(in) name`, `character(len=*) ,intent(in) affiliation`, `character(len=*) ,intent(in) address`, `character(len=*) ,intent(in) telephone`, `character(len=*) ,intent(in) fax`, `character(len=*) ,intent(in) email`, `type(IXTstatus) status`)

Definition at line 62 of file `IXMuser.f90`.

References `IXFset_user()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.78.1.3** subroutine `IXMuser::IXFdestroy_user` (`type(IXTuser) user`,  
`type(IXTstatus) status`)

Definition at line 158 of file `IXMuser.f90`.

References `NXUmodule::status`.

**5.78.1.4** subroutine `IXMuser::IXFget_user` (`type(IXTuser),intent(inout) user`, `type(IXTstatus) status`, `character(len=*)`,`intent(out)`,`optional name`, `character(len=*)`,`intent(out)`,`optional affiliation`, `character(len=*)`,`intent(out)`,`optional address`, `character(len=*)`,`intent(out)`,`optional telephone`, `character(len=*)`,`intent(out)`,`optional fax`, `character(len=*)`,`intent(out)`,`optional email`, `type(IXTuser)`,`optional wout`)

Definition at line 122 of file `IXMuser.f90`.

References `NXUmodule::status`.

**5.78.1.5** subroutine `IXMuser::IXFoperation_run_user` (`type(IXToperation) op`,  
`character(len=*) field`, `type(IXTuser) arg`, `type(IXTstatus) status`)

Definition at line 37 of file `IXMuser.f90`.

References `NXUmodule::status`.

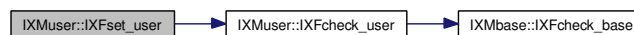
**5.78.1.6** subroutine `IXMuser::IXFset_user` (`type(IXTuser),intent(inout) user`, `type(IXTstatus) status`, `character(len=*)`,`intent(in)`,`optional name`, `character(len=*)`,`intent(in)`,`optional affiliation`, `character(len=*)`,`intent(in)`,`optional address`, `character(len=*)`,`intent(in)`,`optional telephone`, `character(len=*)`,`intent(in)`,`optional fax`, `character(len=*)`,`intent(in)`,`optional email`, `type(IXTuser)`,`intent(in)`,`optional ref`)

Definition at line 85 of file `IXMuser.f90`.

References `IXFcheck_user()`, and `NXUmodule::status`.

Referenced by `IXFcreate_user()`.

Here is the call graph for this function:



## 5.79 IXMworkspace Namespace Reference

### Classes

- struct `IXTworkspace`

### Functions

- subroutine `IXFoperation_run_workspace` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcreate_workspace` (`ws`, `work_no`, `effdet_index`, `status`)
- subroutine `IXFdestroy_workspace` (`ws`, `status`)
- subroutine `IXFset_workspace` (`ws`, `status`, `work_no`, `effdet_index`, `eff_det`, `ref`)
- subroutine `IXFcheck_workspace` (`ws`, `status`)
- subroutine `IXFget_workspace` (`ws`, `status`, `work_no`, `effdet_index`, `eff_det`, `wout`)
- subroutine `IXFget_ptr_workspace` (`ws`, `work_no`, `eff_det`, `effdet_index`)
- subroutine `IXFget_alloc_workspace` (`ws`, `status`, `work_no`, `effdet_index`, `eff_det`, `wout`)
- subroutine `IXFpopulate_workspace` (`workspace`, `wsbrg_ptr`, `spe_ptr`, `det_ptr`, `status`)

### 5.79.1 Function Documentation

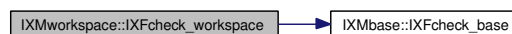
#### 5.79.1.1 subroutine `IXMworkspace::IXFcheck_workspace` (`type(IXTworkspace)` `ws`, `type(IXTstatus)` `status`)

Definition at line 207 of file `IXMworkspace.f90`.

References `IXMbase::IXFcheck_base()`, and `NXUmodule::status`.

Referenced by `IXFset_workspace()`.

Here is the call graph for this function:

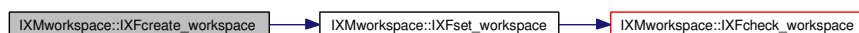


#### 5.79.1.2 subroutine `IXMworkspace::IXFcreate_workspace` (`type(IXTworkspace)`, `intent(out)` `ws`, `integer(i4b)`, `dimension(:)`, `intent(in)` `work_no`, `type(IXTeffdet_index)`, `intent(in)` `effdet_index`, `type(IXTstatus)` `status`)

Definition at line 68 of file `IXMworkspace.f90`.

References `IXFset_workspace()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.79.1.3** subroutine `IXMworkspace::IXFdestroy_workspace` (`type(IXTworkspace)` *ws*, `type(IXTstatus)` *status*)

Definition at line 108 of file `IXMworkspace.f90`.

References `NXUmodule::status`.

**5.79.1.4** subroutine `IXMworkspace::IXFget_alloc_workspace` (`type(IXTworkspace)`, `intent(in)` *ws*, `type(IXTstatus)` *status*, `integer(i4b)`, `dimension(:)`, `optional`, `allocatable` *work\_no*, `type(IXTeffdet_index)`, `intent(out)`, `optional` *effdet\_index*, `type(IXTdetector)`, `intent(out)`, `optional` *eff\_det*, `type(IXTworkspace)`, `intent(out)`, `optional` *wout*)

Definition at line 264 of file `IXMworkspace.f90`.

References `IXFget_workspace()`, and `NXUmodule::status`.

Here is the call graph for this function:



**5.79.1.5** subroutine `IXMworkspace::IXFget_ptr_workspace` (`type(IXTworkspace)`, `intent(in)`, `target` *ws*, `integer(i4b)`, `dimension(:)`, `optional`, `pointer` *work\_no*, `type(IXTdetector)`, `optional`, `pointer` *eff\_det*, `type(IXTeffdet_index)`, `optional`, `pointer` *effdet\_index*)

Definition at line 247 of file `IXMworkspace.f90`.

Referenced by `IXMdata::IXFgetei_data()`, `IXMdata::IXFpeakarea_data()`, `IXMdata::IXFunits_data()`, `IXMdata::IXFunits_rebin_data()`, `IXMdata::remap_data()`, and `IXMdata::sum_data()`.

**5.79.1.6** subroutine `IXMworkspace::IXFget_workspace` (`type(IXTworkspace)`, `intent(in)` *ws*, `type(IXTstatus)` *status*, `integer(i4b)`, `dimension(:)`, `intent(out)`, `optional` *work\_no*, `type(IXTeffdet_index)`, `intent(out)`, `optional` *effdet\_index*, `type(IXTdetector)`, `intent(out)`, `optional` *eff\_det*, `type(IXTworkspace)`, `intent(out)`, `optional` *wout*)

Definition at line 222 of file `IXMworkspace.f90`.

References `NXUmodule::status`.

Referenced by `IXFget_alloc_workspace()`.

**5.79.1.7** subroutine `IXMworkspace::IXFoperation_run_workspace` (`type(IXToperation)` *op*, `character(len=*)` *field*, `type(IXTworkspace)` *arg*, `type(IXTstatus)` *status*)

Definition at line 46 of file `IXMworkspace.f90`.



References NXUmodule::status.

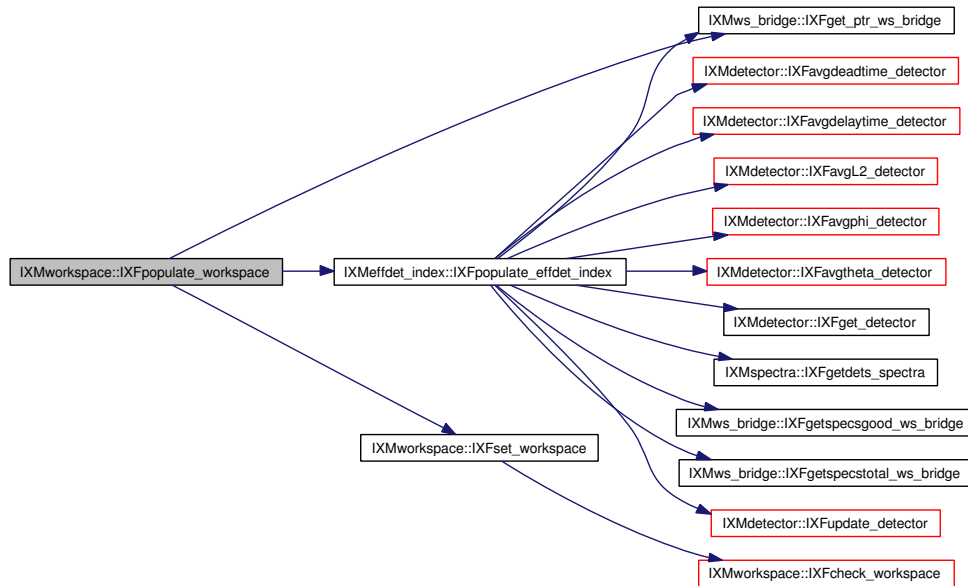
**5.79.1.8 subroutine IXMworkspace::IXFpopulate\_workspace**  
 (type(IXTworkspace) *workspace*, type(IXTws\_bridge), pointer *wsbrg\_ptr*,  
 type(IXTspectra), pointer *spe\_ptr*, type(IXTdetector), pointer *det\_ptr*,  
 type(IXTstatus) *status*)

Definition at line 283 of file IXMworkspace.f90.

References IXMws\_bridge::IXFget\_ptr\_ws\_bridge(), IXMeffdet\_index::IXFpopulate\_effdet\_index(), IXFset\_workspace(), and NXUmodule::status.

Referenced by IXMdata::IXFremap\_data(), and IXMdata::populate\_common().

Here is the call graph for this function:



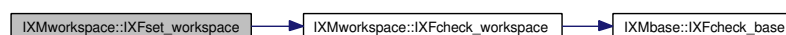
**5.79.1.9 subroutine IXMworkspace::IXFset\_workspace** (type(IXTworkspace) *ws*,  
 type(IXTstatus) *status*, integer(i4b), dimension(:), intent(in), optional  
*work\_no*, type(IXTeffdet\_index), intent(in), optional  
*effdet\_index*, type(IXTdetector), optional, target *eff\_det*,  
 type(IXTworkspace), intent(in), optional *ref*)

Definition at line 142 of file IXMworkspace.f90.

References IXFcheck\_workspace(), and NXUmodule::status.

Referenced by IXFcreate\_workspace(), and IXFpopulate\_workspace().

Here is the call graph for this function:



## 5.80 IXMwrapped\_ var Namespace Reference

### Classes

- struct base\_ object
- struct IXTwrapped\_ object
- struct IXTwrapped\_ var
- interface IXFwrap\_ var
- interface IXFwrap
- interface IXFunwrap\_ var
- interface IXFunwrap\_ varAlloc
- interface IXFunwrap\_ varPtr

### Functions

- integer(i4b) IXFwrap\_ type (wrapped\_ var)
- subroutine wrap\_ i (var, wrapped\_ var, status)
- type(IXTwrapped\_ var) f\_ wrap\_ i (var)
- subroutine wrap\_ dp (var, wrapped\_ var, status)
- type(IXTwrapped\_ var) f\_ wrap\_ dp (var)
- subroutine wrap\_ char (var, wrapped\_ var, status)
- type(IXTwrapped\_ var) f\_ wrap\_ char (var)
- subroutine wrap\_ logval (var, wrapped\_ var, status)
- type(IXTwrapped\_ var) f\_ wrap\_ logval (var)
- subroutine wrap\_ object (var, wrapped\_ var, status)
- type(IXTwrapped\_ var) f\_ wrap\_ object (var)
- subroutine unwrap\_ i (wrapped\_ var, var, status)
- subroutine unwrap\_ dp (wrapped\_ var, var, status)
- subroutine unwrap\_ char (wrapped\_ var, var, status)
- subroutine unwrap\_ logval (wrapped\_ var, var, status)
- subroutine unwrap\_ object (wrapped\_ var, var, status)

### Variables

- integer, parameter IXCvartype\_ unknown = 0
- integer, parameter IXCvartype\_ i = 1
- integer, parameter IXCvartype\_ i1 = 2
- integer, parameter IXCvartype\_ i2 = 3
- integer, parameter IXCvartype\_ i3 = 4
- integer, parameter IXCvartype\_ i4 = 5
- integer, parameter IXCvartype\_ dp = 6
- integer, parameter IXCvartype\_ dp1 = 7
- integer, parameter IXCvartype\_ dp2 = 8
- integer, parameter IXCvartype\_ dp3 = 9
- integer, parameter IXCvartype\_ dp4 = 10
- integer, parameter IXCvartype\_ char = 11
- integer, parameter IXCvartype\_ logical = 12
- integer, parameter IXCvartype\_ object = 13
- integer, parameter IXCvartype\_ char1 = 14

## 5.80.1 Function Documentation

### 5.80.1.1 `type(IXTwrapped_var) IXMwrapped_var::f_wrap_char` (`character(len=*)`,`intent(in) var`)

Definition at line 132 of file IXMwrappedvar.f90.

References IXCvartype\_char.

### 5.80.1.2 `type(IXTwrapped_var) IXMwrapped_var::f_wrap_dp` (`real(dp)`,`intent(in) var`)

Definition at line 115 of file IXMwrappedvar.f90.

References IXMtype\_definitions::dp, and IXCvartype\_dp.

### 5.80.1.3 `type(IXTwrapped_var) IXMwrapped_var::f_wrap_i` (`integer(i4b)`,`intent(in) var`)

Definition at line 98 of file IXMwrappedvar.f90.

References IXCvartype\_i.

### 5.80.1.4 `type(IXTwrapped_var) IXMwrapped_var::f_wrap_logical` (`logical`,`intent(in) var`)

Definition at line 149 of file IXMwrappedvar.f90.

References IXCvartype\_logical.

### 5.80.1.5 `type(IXTwrapped_var) IXMwrapped_var::f_wrap_object` (`type(IXTwrapped_object)`,`intent(in) var`)

Definition at line 166 of file IXMwrappedvar.f90.

References IXCvartype\_object.

### 5.80.1.6 `integer(i4b) IXMwrapped_var::IXFwrap_type` (`type(IXTwrapped_var)`,`intent(in) wrapped_var`)

Definition at line 82 of file IXMwrappedvar.f90.

### 5.80.1.7 `subroutine IXMwrapped_var::unwrap_char` (`type(IXTwrapped_var) wrapped_var`, `character(len=*) var`, `type(IXTstatus) status`)

Definition at line 200 of file IXMwrappedvar.f90.

References IXCvartype\_char, and NXUmodule::status.

### 5.80.1.8 `subroutine IXMwrapped_var::unwrap_dp` (`type(IXTwrapped_var) wrapped_var`, `real(dp) var`, `type(IXTstatus) status`)

Definition at line 187 of file IXMwrappedvar.f90.

References IXMtype\_definitions::dp, IXCvartype\_dp, and NXUmodule::status.

**5.80.1.9** subroutine IXMwrapped\_var::unwrap\_i (type(IXTwrapped\_var)  
wrapped\_var, integer(i4b) var, type(IXTstatus) status)

Definition at line 174 of file IXMwrappedvar.f90.

References IXCvartype\_i, and NXUmodule::status.

**5.80.1.10** subroutine IXMwrapped\_var::unwrap\_logval (type(IXTwrapped\_var)  
wrapped\_var, logical logical, type(IXTstatus) status)

Definition at line 213 of file IXMwrappedvar.f90.

References IXCvartype\_logical, and NXUmodule::status.

**5.80.1.11** subroutine IXMwrapped\_var::unwrap\_object (type(IXTwrapped\_var)  
wrapped\_var, type(IXTwrapped\_object) var, type(IXTstatus) status)

Definition at line 226 of file IXMwrappedvar.f90.

References IXCvartype\_object, and NXUmodule::status.

**5.80.1.12** subroutine IXMwrapped\_var::wrap\_char (character(len=\*),intent(in)  
var, type(IXTwrapped\_var) wrapped\_var, type(IXTstatus) status)

Definition at line 123 of file IXMwrappedvar.f90.

References IXCvartype\_char.

**5.80.1.13** subroutine IXMwrapped\_var::wrap\_dp (real(dp),intent(in) var,  
type(IXTwrapped\_var) wrapped\_var, type(IXTstatus) status)

Definition at line 106 of file IXMwrappedvar.f90.

References IXMtype\_definitions::dp, and IXCvartype\_dp.

**5.80.1.14** subroutine IXMwrapped\_var::wrap\_i (integer(i4b),intent(in) var,  
type(IXTwrapped\_var) wrapped\_var, type(IXTstatus) status)

Definition at line 89 of file IXMwrappedvar.f90.

References IXCvartype\_i.

**5.80.1.15** subroutine IXMwrapped\_var::wrap\_logval (logical,intent(in) var,  
type(IXTwrapped\_var) wrapped\_var, type(IXTstatus) status)

Definition at line 140 of file IXMwrappedvar.f90.

References IXCvartype\_logical.

**5.80.1.16** subroutine IXMwrapped\_var::wrap\_object (type(IXTwrapped\_ - object),intent(in) var, type(IXTwrapped\_var) wrapped\_var, type(IXTstatus) status)

Definition at line 157 of file IXMwrappedvar.f90.

References IXCvartype\_object.

## 5.80.2 Variable Documentation

**5.80.2.1** integer,parameter IXMwrapped\_var::IXCvartype\_char = 11

Definition at line 24 of file IXMwrappedvar.f90.

Referenced by f\_wrap\_char(), unwrap\_char(), and wrap\_char().

**5.80.2.2** integer,parameter IXMwrapped\_var::IXCvartype\_char1 = 14

Definition at line 24 of file IXMwrappedvar.f90.

**5.80.2.3** integer,parameter IXMwrapped\_var::IXCvartype\_dp = 6

Definition at line 23 of file IXMwrappedvar.f90.

Referenced by f\_wrap\_dp(), unwrap\_dp(), and wrap\_dp().

**5.80.2.4** integer,parameter IXMwrapped\_var::IXCvartype\_dp1 = 7

Definition at line 23 of file IXMwrappedvar.f90.

**5.80.2.5** integer,parameter IXMwrapped\_var::IXCvartype\_dp2 = 8

Definition at line 23 of file IXMwrappedvar.f90.

**5.80.2.6** integer,parameter IXMwrapped\_var::IXCvartype\_dp3 = 9

Definition at line 23 of file IXMwrappedvar.f90.

**5.80.2.7** integer,parameter IXMwrapped\_var::IXCvartype\_dp4 = 10

Definition at line 24 of file IXMwrappedvar.f90.

**5.80.2.8** integer,parameter IXMwrapped\_var::IXCvartype\_i = 1

Definition at line 22 of file IXMwrappedvar.f90.

Referenced by f\_wrap\_i(), unwrap\_i(), and wrap\_i().

**5.80.2.9 integer,parameter IXMwrapped\_var::IXCvartype\_i1 = 2**

Definition at line 22 of file IXMwrappedvar.f90.

**5.80.2.10 integer,parameter IXMwrapped\_var::IXCvartype\_i2 = 3**

Definition at line 22 of file IXMwrappedvar.f90.

**5.80.2.11 integer,parameter IXMwrapped\_var::IXCvartype\_i3 = 4**

Definition at line 22 of file IXMwrappedvar.f90.

**5.80.2.12 integer,parameter IXMwrapped\_var::IXCvartype\_i4 = 5**

Definition at line 23 of file IXMwrappedvar.f90.

**5.80.2.13 integer,parameter IXMwrapped\_var::IXCvartype\_logical = 12**

Definition at line 24 of file IXMwrappedvar.f90.

Referenced by `f_wrap_logval()`, `unwrap_logval()`, and `wrap_logval()`.

**5.80.2.14 integer,parameter IXMwrapped\_var::IXCvartype\_object = 13**

Definition at line 24 of file IXMwrappedvar.f90.

Referenced by `f_wrap_object()`, `unwrap_object()`, and `wrap_object()`.

**5.80.2.15 integer,parameter IXMwrapped\_var::IXCvartype\_unknown = 0**

Definition at line 22 of file IXMwrappedvar.f90.

## 5.81 IXMws\_bridge Namespace Reference

### Classes

- struct `IXTws_bridge`

### Functions

- subroutine `IXFoperation_run_ws_bridge` (`op`, `field`, `arg`, `status`)
- subroutine `IXFcheck_ws_bridge` (`arg`, `status`)
- subroutine `IXFcreate_ws_bridge` (`ws_bridge`, `work_no`, `total_spec`, `spec_ind`, `bad_spectra_flag`, `spec_no`, `status`)
- subroutine `IXFdestroy_ws_bridge` (`ws_bridge`, `status`)
- subroutine `IXFset_ws_bridge` (`ws_bridge`, `status`, `work_no`, `total_spec`, `spec_ind`, `bad_spectra_flag`, `spec_no`, `ref`)
- subroutine `IXFget_ws_bridge` (`ws_bridge`, `status`, `work_no`, `total_spec`, `spec_ind`, `bad_spectra_flag`, `spec_no`, `wout`)
- subroutine `IXFget_ptr_ws_bridge` (`ws_bridge`, `work_no`, `total_spec`, `spec_ind`, `bad_spectra_flag`, `spec_no`)
- subroutine `IXFget_alloc_ws_bridge` (`ws_bridge`, `status`, `work_no`, `total_spec`, `spec_ind`, `bad_spectra_flag`, `spec_no`, `wout`)
- subroutine `IXFgetspecstotal_ws_bridge` (`ws`, `wk_index`, `specs_out`)
- subroutine `IXFgetspecsgood_ws_bridge` (`ws`, `wk_index`, `specs_out`, `ind_out`)
- subroutine `IXFcheck_subsid_ws_bridge` (`old_ws`, `new_ws`, `lookup`)
- logical `IXFcompare_ws_bridge` (`wsb1`, `wsb2`)

### 5.81.1 Function Documentation

**5.81.1.1** subroutine `IXMws_bridge::IXFcheck_subsid_ws_bridge`  
 (`type(IXTws_bridge)`,`intent(in) old_ws`, `type(IXTws_bridge)`,`intent(in) new_ws`, `integer(i4b)`,`dimension(:)`,`allocatable lookup`)

Definition at line 299 of file `IXMws_bridge.f90`.

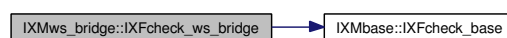
**5.81.1.2** subroutine `IXMws_bridge::IXFcheck_ws_bridge` (`type(IXTws_bridge) arg`, `type(IXTstatus) status`)

Definition at line 60 of file `IXMws_bridge.f90`.

References `IXMbase::IXFcheck_base()`, and `NXUmodule::status`.

Referenced by `IXFset_ws_bridge()`.

Here is the call graph for this function:



**5.81.1.3** subroutine `IXMws_bridge::IXFcompare_ws_bridge` (`type(IXTws_bridge)`, `intent(in) wsb1`, `type(IXTws_bridge)`, `intent(in) wsb2`)

Definition at line 349 of file `IXMws_bridge.f90`.

Referenced by `IXMbridge::IXFcompare_bridge()`.

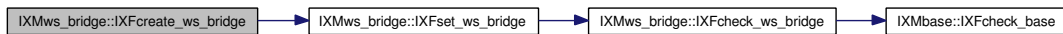
**5.81.1.4** subroutine `IXMws_bridge::IXFcreate_ws_bridge` (`type(IXTws_bridge)` `ws_bridge`, `integer(i4b)`, `dimension(:)`, `intent(in)` `work_no`, `integer(i4b)`, `dimension(:)`, `intent(in)` `total_spec`, `integer(i4b)`, `dimension(:)`, `intent(in)` `spec_ind`, `integer(i4b)`, `dimension(:)`, `intent(in)` `bad_spectra_flag`, `integer(i4b)`, `dimension(:)`, `intent(in)` `spec_no`, `type(IXTstatus)` `status`)

Definition at line 73 of file `IXMws_bridge.f90`.

References `IXFset_ws_bridge()`, and `NXUmodule::status`.

Referenced by `IXMbridge::IXFpopulate_bridge()`.

Here is the call graph for this function:



**5.81.1.5** subroutine `IXMws_bridge::IXFdestroy_ws_bridge` (`type(IXTws_bridge)` `ws_bridge`, `type(IXTstatus)` `status`)

Definition at line 92 of file `IXMws_bridge.f90`.

References `NXUmodule::status`.

**5.81.1.6** subroutine `IXMws_bridge::IXFget_alloc_ws_bridge` (`type(IXTws_bridge)`, `intent(in)` `ws_bridge`, `type(IXTstatus)` `status`, `integer(i4b)`, `dimension(:)`, `optional`, `allocatable` `work_no`, `integer(i4b)`, `dimension(:)`, `optional`, `allocatable` `total_spec`, `integer(i4b)`, `dimension(:)`, `optional`, `allocatable` `spec_ind`, `integer(i4b)`, `dimension(:)`, `optional`, `allocatable` `bad_spectra_flag`, `integer(i4b)`, `dimension(:)`, `optional`, `allocatable` `spec_no`, `type(IXTws_bridge)`, `intent(out)` `wout`)

Definition at line 214 of file `IXMws_bridge.f90`.

References `IXFget_ws_bridge()`, and `NXUmodule::status`.

Here is the call graph for this function:





**5.81.1.7** subroutine IXMws\_bridge::IXFget\_ptr\_ws\_bridge (type(IXTws\_bridge) *ws\_bridge*, integer(i4b),dimension(:),optional,pointer *work\_no*, integer(i4b),dimension(:),optional,pointer *total\_spec*, integer(i4b),dimension(:),optional,pointer *spec\_ind*, integer(i4b),dimension(:),optional,pointer *bad\_spectra\_flag*, integer(i4b),dimension(:),optional,pointer *spec\_no*)

Definition at line 195 of file IXMws\_bridge.f90.

Referenced by IXMeffdet\_index::IXFpopulate\_effdet\_index(), and IXMworkspace::IXFpopulate\_workspace().

**5.81.1.8** subroutine IXMws\_bridge::IXFget\_ws\_bridge (type(IXTws\_bridge),intent(in) *ws\_bridge*, type(IXTstatus) *status*, integer(i4b),dimension(:),intent(out),optional *work\_no*, integer(i4b),dimension(:),intent(out),optional *total\_spec*, integer(i4b),dimension(:),intent(out),optional *spec\_ind*, integer(i4b),dimension(:),intent(out),optional *bad\_spectra\_flag*, integer(i4b),dimension(:),intent(out),optional *spec\_no*, type(IXTws\_bridge),intent(out),optional *wout*)

Definition at line 168 of file IXMws\_bridge.f90.

References NXUmodule::status.

Referenced by IXFget\_alloc\_ws\_bridge().

**5.81.1.9** subroutine IXMws\_bridge::IXFgetspecsgood\_ws\_bridge (type(IXTws\_bridge) *ws*, integer(i4b),intent(in) *wk\_index*, integer(i4b),dimension(:),optional,allocatable *specs\_out*, integer(i4b),dimension(:),optional,allocatable *ind\_out*)

Definition at line 268 of file IXMws\_bridge.f90.

Referenced by IXMeffdet\_index::IXFpopulate\_effdet\_index().

**5.81.1.10** subroutine IXMws\_bridge::IXFgetspecstotal\_ws\_bridge (type(IXTws\_bridge) *ws*, integer(i4b),intent(in) *wk\_index*, integer(i4b),dimension(:),allocatable *specs\_out*)

Definition at line 248 of file IXMws\_bridge.f90.

Referenced by IXMeffdet\_index::IXFpopulate\_effdet\_index().

**5.81.1.11** subroutine IXMws\_bridge::IXFoperation\_run\_ws\_bridge (type(IXToperation) *op*, character(len=\*) *field*, type(IXTws\_bridge) *arg*, type(IXTstatus) *status*)

Definition at line 37 of file IXMws\_bridge.f90.

References NXUmodule::status.

**5.81.1.12** subroutine `IXMws_bridge::IXFset_ws_bridge` (`type(IXTws_bridge)`, `intent(inout)` `ws_bridge`, `type(IXTstatus)` `status`, `integer(i4b)`, `dimension(:)`, `intent(in)`, optional `work_no`, `integer(i4b)`, `dimension(:)`, `intent(in)`, optional `total_spec`, `integer(i4b)`, `dimension(:)`, `intent(in)`, optional `spec_ind`, `integer(i4b)`, `dimension(:)`, `intent(in)`, optional `bad_spectra_flag`, `integer(i4b)`, `dimension(:)`, `intent(in)`, optional `spec_no`, `type(IXTws_bridge)`, `intent(in)`, optional `ref`)

Definition at line 119 of file `IXMws_bridge.f90`.

References `IXFcheck_ws_bridge()`, and `NXUmodule::status`.

Referenced by `IXFcreate_ws_bridge()`.

Here is the call graph for this function:



## 5.82 m\_mrgnrk Namespace Reference

### Classes

- interface **IXFrank**

### Functions

- Real(kind=kdp) **D\_valmed** (*XDONT*)
- Real **R\_valmed** (*XDONT*)
- Integer **I\_valmed** (*XDONT*)

### Variables

- Integer, parameter **kdp** = selected\_real\_kind(15)

#### 5.82.1 Function Documentation

**5.82.1.1** Real(kind=kdp) **m\_mrgnrk::D\_valmed** (Real(kind=kdp),dimension (:),intent(in) *XDONT*)

Definition at line 1830 of file IXMsort.f90.

**5.82.1.2** Integer **m\_mrgnrk::I\_valmed** (Integer,dimension (:),intent(in) *XDONT*)

Definition at line 2501 of file IXMsort.f90.

**5.82.1.3** Real **m\_mrgnrk::R\_valmed** (Real,dimension (:),intent(in) *XDONT*)

Definition at line 2166 of file IXMsort.f90.

#### 5.82.2 Variable Documentation

**5.82.2.1** Integer,parameter **m\_mrgnrk::kdp** = selected\_real\_kind(15)

Definition at line 1210 of file IXMsort.f90.

## 5.83 m\_refsor Namespace Reference

### Classes

- interface **IXFsort**

### Functions

- subroutine **D\_refsor** (*XDONT*)
- subroutine **D\_subsor** (*XDONT*, *IDEB1*, *IFIN1*)
- subroutine **D\_inssor** (*XDONT*)
- subroutine **R\_refsor** (*XDONT*)
- subroutine **R\_subsor** (*XDONT*, *IDEB1*, *IFIN1*)
- subroutine **R\_inssor** (*XDONT*)
- subroutine **I\_refsor** (*XDONT*)
- subroutine **I\_subsor** (*XDONT*, *IDEB1*, *IFIN1*)
- subroutine **I\_inssor** (*XDONT*)

### Variables

- Integer, parameter **kdp** = `selected_real_kind(15)`

#### 5.83.1 Function Documentation

**5.83.1.1** subroutine `m_refsor::D_inssor` (`Real(kind=kdp),dimension (:),intent(inout) XDONT`)

Definition at line 146 of file `IXMsort.f90`.

**5.83.1.2** subroutine `m_refsor::D_refsor` (`Real (kind=kdp),dimension (:),intent(inout) XDONT`)

Definition at line 40 of file `IXMsort.f90`.

**5.83.1.3** subroutine `m_refsor::D_subsor` (`Real(kind=kdp),dimension (:),intent(inout) XDONT, Integer,intent(in) IDEB1, Integer,intent(in) IFIN1`)

Definition at line 63 of file `IXMsort.f90`.

**5.83.1.4** subroutine `m_refsor::I_inssor` (`Integer,dimension (:),intent(inout) XDONT`)

Definition at line 404 of file `IXMsort.f90`.

**5.83.1.5** subroutine `m_refsor::I_refsor` (`Integer,dimension (:),intent(inout) XDONT`)

Definition at line 298 of file `IXMsort.f90`.

**5.83.1.6** subroutine m\_refsr::I\_subsr (Integer,dimension (:),intent(inout)  
*XDONT*, Integer,intent(in) *IDEB1*, Integer,intent(in) *IFIN1*)

Definition at line 321 of file IXMsort.f90.

**5.83.1.7** subroutine m\_refsr::R\_insr (Real,dimension (:),intent(inout)  
*XDONT*)

Definition at line 275 of file IXMsort.f90.

**5.83.1.8** subroutine m\_refsr::R\_refsr (Real,dimension (:),intent(inout) *XDONT*)

Definition at line 169 of file IXMsort.f90.

**5.83.1.9** subroutine m\_refsr::R\_subsr (Real,dimension (:),intent(inout)  
*XDONT*, Integer,intent(in) *IDEB1*, Integer,intent(in) *IFIN1*)

Definition at line 192 of file IXMsort.f90.

## 5.83.2 Variable Documentation

**5.83.2.1** Integer,parameter m\_refsr::kdp = selected\_real\_kind(15)

Definition at line 29 of file IXMsort.f90.

## 5.84 m\_unirnk Namespace Reference

### Classes

- interface **IXFunique\_rank**

### Functions

- subroutine **D\_unirnk** (*XVALT*, *IRNGT*, *NUNI*)
- subroutine **R\_unirnk** (*XVALT*, *IRNGT*, *NUNI*)
- subroutine **I\_unirnk** (*XVALT*, *IRNGT*, *NUNI*)
- **Real**(kind=*kdp*) **D\_nearless** (*XVAL*)
- **Real** **R\_nearless** (*XVAL*)
- **Integer** **I\_nearless** (*XVAL*)

### Variables

- **Integer**, parameter **kdp** = selected\_real\_kind(15)

#### 5.84.1 Function Documentation

**5.84.1.1** **Real** (kind=*kdp*) **m\_unirnk::D\_nearless** (**Real** (kind=*kdp*),intent(in) *XVAL*)

Definition at line 1175 of file IXMsort.f90.

**5.84.1.2** subroutine **m\_unirnk::D\_unirnk** (**Real** (**Kind**=*kdp*),**dimension** (:),intent(in) *XVALT*, **Integer**,**dimension** (:),intent(out) *IRNGT*, **Integer**,intent(out) *NUNI*)

Definition at line 444 of file IXMsort.f90.

**5.84.1.3** **Integer** **m\_unirnk::I\_nearless** (**Integer**,intent(in) *XVAL*)

Definition at line 1195 of file IXMsort.f90.

**5.84.1.4** subroutine **m\_unirnk::I\_unirnk** (**Integer**,**dimension** (:),intent(in) *XVALT*, **Integer**,**dimension** (:),intent(out) *IRNGT*, **Integer**,intent(out) *NUNI*)

Definition at line 931 of file IXMsort.f90.

**5.84.1.5** **Real** **m\_unirnk::R\_nearless** (**Real**,intent(in) *XVAL*)

Definition at line 1185 of file IXMsort.f90.

**5.84.1.6** subroutine **m\_unirnk::R\_unirnk** (**Real**,**dimension** (:),intent(in) *XVALT*, **Integer**,**dimension** (:),intent(out) *IRNGT*, **Integer**,intent(out) *NUNI*)

Definition at line 688 of file IXMsort.f90.

## 5.84.2 Variable Documentation

### 5.84.2.1 Integer,parameter m\_unirnk::kdp = selected\_real\_kind(15)

Definition at line 430 of file IXMsort.f90.

## 5.85 m\_valmed Namespace Reference



## 5.86 NE Namespace Reference

## 5.87 NXmodule Namespace Reference

### Classes

- struct NXhandle
- struct NXlink
- interface NXgetdata
- interface NXgetslab
- interface NXgetattr
- interface NXputdata
- interface NXputslab
- interface NXputattr

### Functions

- INTEGER NXopen (file\_name, access\_method, file\_id)
- INTEGER NXclose (file\_id)
- INTEGER NXflush (file\_id)
- INTEGER NXmakegroup (file\_id, group\_name, group\_class)
- INTEGER NXopengroup (file\_id, group\_name, group\_class)
- INTEGER NXclosegroup (file\_id)
- function NXmakedata (file\_id, data\_name, data\_type, data\_rank, data\_dimensions, compress\_type, chunk\_size)
- INTEGER NXopendata (file\_id, data\_name)
- INTEGER NXcompress (file\_id, compress\_type)
- INTEGER NXclosedata (file\_id)
- INTEGER NXgeti1 (file\_id, data)
- INTEGER NXgeti2 (file\_id, data)
- INTEGER NXgeti4 (file\_id, data)
- INTEGER NXgetr4 (file\_id, data)
- INTEGER NXgetr8 (file\_id, data)
- INTEGER NXgetchar (file\_id, data)
- INTEGER NXgeti1slab (file\_id, data, data\_start, data\_size)
- INTEGER NXgeti2slab (file\_id, data, data\_start, data\_size)
- INTEGER NXgeti4slab (file\_id, data, data\_start, data\_size)
- INTEGER NXgetr4slab (file\_id, data, data\_start, data\_size)
- INTEGER NXgetr8slab (file\_id, data, data\_start, data\_size)
- function NXgeti1attr (file\_id, attr\_name, value, attr\_length, attr\_type)
- function NXgeti2attr (file\_id, attr\_name, value, attr\_length, attr\_type)
- function NXgeti4attr (file\_id, attr\_name, value, attr\_length, attr\_type)
- function NXgetr4attr (file\_id, attr\_name, value, attr\_length, attr\_type)
- function NXgetr8attr (file\_id, attr\_name, value, attr\_length, attr\_type)
- function NXgetcharattr (file\_id, attr\_name, value, attr\_length, attr\_type)
- INTEGER NXputi1 (file\_id, data)
- INTEGER NXputi2 (file\_id, data)
- INTEGER NXputi4 (file\_id, data)
- INTEGER NXputr4 (file\_id, data)
- INTEGER NXputr8 (file\_id, data)
- INTEGER NXputchar (file\_id, data)
- INTEGER NXputi1slab (file\_id, data, data\_start, data\_size)

- INTEGER NXputi2slab (file\_id, data, data\_start, data\_size)
- INTEGER NXputi4slab (file\_id, data, data\_start, data\_size)
- INTEGER NXputr4slab (file\_id, data, data\_start, data\_size)
- INTEGER NXputr8slab (file\_id, data, data\_start, data\_size)
- function NXputi1attr (file\_id, name, value, value\_length, value\_type)
- function NXputi2attr (file\_id, name, value, value\_length, value\_type)
- function NXputi4attr (file\_id, name, value, value\_length, value\_type)
- function NXputr4attr (file\_id, name, value, value\_length, value\_type)
- function NXputr8attr (file\_id, name, value, value\_length, value\_type)
- function NXputcharattr (file\_id, name, value, value\_length, value\_type)
- function NXgetinfo (file\_id, data\_rank, data\_dimensions, data\_type)
- INTEGER NXgetnextentry (file\_id, name, class, data\_type)
- function NXgetnextattr (file\_id, attr\_name, attr\_length, attr\_type)
- INTEGER NXgetgroupID (file\_id, group\_id)
- INTEGER NXgetdataID (file\_id, data\_id)
- LOGICAL NXsameID (file\_id, first\_id, second\_id)
- INTEGER NXmakelink (file\_id, link)
- function NXgetgroupinfo (file\_id, item\_number, group\_name, group\_class)
- INTEGER NXinitgroupdir (file\_id)
- function NXgroupdir (file\_id, item\_number, item\_name, item\_class)
- INTEGER NXgetattrinfo (file\_id, attr\_number)
- INTEGER NXinitattrdir (file\_id)
- INTEGER NXattrdir (file\_id, attr\_number, attr\_name)
- INTEGER, dimension(size(dimensions) NXreverse (rank, dimensions)
- INTEGER(kind=NXi1), dimension(255) NXCstring (string)
- CHARACTER(len=255) NXFstring (array)
- CHARACTER(len=10) NXdatatype (int\_type)
- subroutine NXerror (message)

## Variables

- CHARACTER(len=\*), parameter NeXus\_version
- INTEGER, parameter NXACC\_READ = 1
- INTEGER, parameter NXACC\_RDWR = 2
- INTEGER, parameter NXACC\_CREATE = 3
- INTEGER, parameter NXACC\_CREATE4 = 4
- INTEGER, parameter NXACC\_CREATE5 = 5
- INTEGER, parameter NXACC\_CREATEXML = 6
- INTEGER, parameter NX\_OK = 1
- INTEGER, parameter NX\_ERROR = 0
- INTEGER, parameter NX\_EOD = -1
- INTEGER, parameter NX\_CHAR = 4
- INTEGER, parameter NX\_FLOAT32 = 5
- INTEGER, parameter NX\_FLOAT64 = 6
- INTEGER, parameter NX\_INT8 = 20
- INTEGER, parameter NX\_UINT8 = 21
- INTEGER, parameter NX\_INT16 = 22
- INTEGER, parameter NX\_UINT16 = 23
- INTEGER, parameter NX\_INT32 = 24
- INTEGER, parameter NX\_UINT32 = 25

- INTEGER, parameter NX\_COMP\_NONE = 100
- INTEGER, parameter NX\_COMP\_LZW = 200
- INTEGER, parameter NX\_COMP\_RLE = 300
- INTEGER, parameter NX\_COMP\_HUF = 400
- INTEGER, parameter NX\_UNLIMITED = -1
- INTEGER, parameter NX\_MAXRANK = 32
- INTEGER, parameter NX\_MAXNAMELEN = 64
- INTEGER, parameter NX\_MAXSTACK = 50
- INTEGER, parameter NXi1 = selected\_int\_kind(2)
- INTEGER, parameter NXi2 = selected\_int\_kind(4)
- INTEGER, parameter NXi4 = selected\_int\_kind(8)
- INTEGER, parameter NXr4 = kind(1.0)
- INTEGER, parameter NXr8 = kind(1.0D0)
- INTEGER(KIND=NXi1), dimension(:), allocatable buffer\_i1
- INTEGER(KIND=NXi2), dimension(:), allocatable buffer\_i2
- INTEGER(KIND=NXi4), dimension(:), allocatable buffer\_i4
- REAL(KIND=NXr4), dimension(:), allocatable buffer\_r4
- REAL(KIND=NXr8), dimension(:), allocatable buffer\_r8
- INTEGER NXrank
- INTEGER NXdims
- INTEGER NXtype
- INTEGER NXsize

## 5.87.1 Function Documentation

**5.87.1.1** INTEGER NXmodule::NXattrdir (TYPE(NXhandle),intent(inout) *file\_id*, INTEGER,intent(out) *attr\_number*, CHARACTER(len=\*),dimension(:),intent(out) *attr\_name*)

Definition at line 1292 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXsize, NXUmodule::NXtype, and NXUmodule::status.

Referenced by NXUmodule::NXUfindattr().

**5.87.1.2** INTEGER NXmodule::NXclose (TYPE(NXhandle),intent(inout) *file\_id*)

Definition at line 149 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.3** INTEGER NXmodule::NXclosedata (TYPE(NXhandle),intent(inout) *file\_id*)

Definition at line 263 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

#### 5.87.1.4 INTEGER NXmodule::NXclosegroup (TYPE(NXhandle),intent(inout) *file\_id*)

Definition at line 197 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUfindlink(), NXUmodule::NXUresumelink(), and NXUmodule::NXUsearchgroup().

#### 5.87.1.5 INTEGER NXmodule::NXcompress (TYPE(NXhandle),intent(inout) *file\_id*, INTEGER,intent(in) *compress\_type*)

Definition at line 251 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

#### 5.87.1.6 INTEGER(kind=NXi1),dimension(255) NXmodule::NXCstring (CHARACTER(len=\*),intent(in) *string*)

Definition at line 1338 of file NXmodule.f90.

#### 5.87.1.7 CHARACTER(len=10) NXmodule::NXdatatype (INTEGER,intent(in) *int\_type*)

Definition at line 1369 of file NXmodule.f90.

#### 5.87.1.8 subroutine NXmodule::NXerror (CHARACTER(len=\*),intent(in) *message*)

Definition at line 1388 of file NXmodule.f90.

Referenced by NXUmodule::NXUfindattr(), NXUmodule::NXUfindaxis(), NXUmodule::NXUfindclass(), NXUmodule::NXUfinddata(), NXUmodule::NXUfindgroup(), NXUmodule::NXUfindsignal(), NXUmodule::NXUpreparedata(), NXUmodule::NXUresumelink(), NXUmodule::NXUsearchgroup(), and NXUmodule::NXUsetcompress().

#### 5.87.1.9 INTEGER NXmodule::NXflush (TYPE(NXhandle),intent(inout) *file\_id*)

Definition at line 160 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

#### 5.87.1.10 CHARACTER(len=255) NXmodule::NXFstring (INTEGER(kind=NXi1),dimension(:),intent(in) *array*)

Definition at line 1354 of file NXmodule.f90.

#### 5.87.1.11 INTEGER NXmodule::NXgetattrinfo (TYPE(NXhandle),intent(inout) *file\_id*, INTEGER,intent(out) *attr\_number*)

Definition at line 1269 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUfindattr().

**5.87.1.12** INTEGER NXmodule::NXgetchar (TYPE(NXhandle),intent(inout)  
file\_id, CHARACTER(len=\*),intent(out) data)

Definition at line 473 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXsize, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.13** function NXmodule::NXgetcharattr (TYPE(NXhandle),intent(inout)  
file\_id, CHARACTER(len=\*),intent(in) attr\_name,  
CHARACTER(len=\*),intent(out) value,  
INTEGER,intent(inout),optional attr\_length,  
INTEGER,intent(in),optional attr\_type)

Definition at line 815 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.14** INTEGER NXmodule::NXgetdataID (TYPE(NXhandle),intent(inout)  
file\_id, TYPE(NXlink),intent(out) data\_id)

Definition at line 1158 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUfindlink(), and NXUmodule::NXUsearchgroup().

**5.87.1.15** INTEGER NXmodule::NXgetgroupID (TYPE(NXhandle),intent(inout)  
file\_id, TYPE(NXlink),intent(out) group\_id)

Definition at line 1144 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUfindlink(), NXUmodule::NXUresumelink(), and NXUmodule::NXUsearchgroup().

**5.87.1.16** function NXmodule::NXgetgroupinfo (TYPE(NXhandle),intent(inout)  
file\_id, INTEGER,intent(out) item\_number,  
CHARACTER(len=\*),intent(out),optional group\_name,  
CHARACTER(len=\*),intent(out),optional group\_class)

Definition at line 1202 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUfindclass(), NXUmodule::NXUfinddata(), NXUmodule::NXUfindgroup(), NXUmodule::NXUresumelink(), and NXUmodule::NXUsearchgroup().

**5.87.1.17** `INTEGER NXmodule::NXgeti1 (TYPE(NXhandle),intent(inout) file_id, INTEGER(KIND=NXi1),dimension(:),intent(out) data)`

Definition at line 278 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXsize, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.18** `function NXmodule::NXgeti1attr (TYPE(NXhandle),intent(inout) file_id, CHARACTER(len=*),intent(in) attr_name, INTEGER(KIND=NXi1),intent(out) value, INTEGER,intent(inout),optional attr_length, INTEGER,intent(in),optional attr_type)`

Definition at line 725 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.19** `INTEGER NXmodule::NXgeti1slab (TYPE(NXhandle),intent(inout) file_id, INTEGER(KIND=NXi1),dimension(:),intent(out) data, INTEGER,dimension(:),intent(in) data_start, INTEGER,dimension(:),intent(in) data_size)`

Definition at line 508 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXsize, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.20** `INTEGER NXmodule::NXgeti2 (TYPE(NXhandle),intent(inout) file_id, INTEGER(KIND=NXi2),dimension(:),intent(out) data)`

Definition at line 325 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXsize, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.21** `function NXmodule::NXgeti2attr (TYPE(NXhandle),intent(inout) file_id, CHARACTER(len=*),intent(in) attr_name, INTEGER(KIND=NXi2),intent(out) value, INTEGER,intent(inout),optional attr_length, INTEGER,intent(in),optional attr_type)`

Definition at line 743 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.22** `INTEGER NXmodule::NXgeti2slab (TYPE(NXhandle),intent(inout) file_id, INTEGER(KIND=NXi2),dimension(:),intent(out) data, INTEGER,dimension(:),intent(in) data_start, INTEGER,dimension(:),intent(in) data_size)`

Definition at line 559 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXsize, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.23 INTEGER NXmodule::NXgeti4 (TYPE(NXhandle),intent(inout) file\_id, INTEGER(KIND=NXi4),dimension(:),intent(out) data)**

Definition at line 367 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXsize, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.24 function NXmodule::NXgeti4attr (TYPE(NXhandle),intent(inout) file\_id, CHARACTER(len=\*),intent(in) attr\_name, INTEGER(KIND=NXi4),intent(out) value, INTEGER,intent(inout),optional attr\_length, INTEGER,intent(in),optional attr\_type)**

Definition at line 761 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.25 INTEGER NXmodule::NXgeti4slab (TYPE(NXhandle),intent(inout) file\_id, INTEGER(KIND=NXi4),dimension(:),intent(out) data, INTEGER,dimension(:),intent(in) data\_start, INTEGER,dimension(:),intent(in) data\_size)**

Definition at line 605 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXsize, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.26 function NXmodule::NXgetinfo (TYPE(NXhandle),intent(inout) file\_id, INTEGER,intent(out) data\_rank, INTEGER,dimension(:),intent(out) data\_dimensions, INTEGER,dimension,intent(out) data\_type)**

Definition at line 1093 of file NXmodule.f90.

References NXUmodule::data\_dimensions, NXUmodule::data\_rank, NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUfindaxis(), NXUmodule::NXUfindsignal(), and NXUmodule::NXUpreparedata().

**5.87.1.27 function NXmodule::NXgetnextattr (TYPE(NXhandle),intent(inout) file\_id, CHARACTER(len=\*),intent(out) attr\_name, INTEGER,intent(out) attr\_length, INTEGER,intent(out) attr\_type)**

Definition at line 1127 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.



**5.87.1.28** INTEGER NXmodule::NXgetnextentry (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(out) *name*, CHARACTER(len=\*),intent(out) *class*, INTEGER,intent(out) *data\_type*)

Definition at line 1109 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUfindaxis(), and NXUmodule::NXUfindsignal().

**5.87.1.29** INTEGER NXmodule::NXgetr4 (TYPE(NXhandle),intent(inout) *file\_id*, REAL(KIND=NXr4),dimension(:),intent(out) *data*)

Definition at line 404 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXsize, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.30** function NXmodule::NXgetr4attr (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *attr\_name*, REAL(KIND=NXr4),intent(out) *value*, INTEGER,intent(inout),optional *attr\_length*, INTEGER,intent(in),optional *attr\_type*)

Definition at line 779 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.31** INTEGER NXmodule::NXgetr4slab (TYPE(NXhandle),intent(inout) *file\_id*, REAL(KIND=NXr4),dimension(:),intent(out) *data*, INTEGER,dimension(:),intent(in) *data\_start*, INTEGER,dimension(:),intent(in) *data\_size*)

Definition at line 646 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXsize, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.32** INTEGER NXmodule::NXgetr8 (TYPE(NXhandle),intent(inout) *file\_id*, REAL(KIND=NXr8),dimension(:),intent(out) *data*)

Definition at line 436 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXsize, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.33** function NXmodule::NXgetr8attr (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *attr\_name*, REAL(KIND=NXr8),intent(out) *value*, INTEGER,intent(inout),optional *attr\_length*, INTEGER,intent(in),optional *attr\_type*)

Definition at line 797 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.34** `INTEGER NXmodule::NXgetr8slab (TYPE(NXhandle),intent(inout)  
file_id, REAL(KIND=NXr8),dimension(:),intent(out)  
data, INTEGER,dimension(:),intent(in) data_start,  
 INTEGER,dimension(:),intent(in) data_size)`

Definition at line 686 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXsize, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.35** `function NXmodule::NXgroupdir (TYPE(NXhandle),intent(inout)  
file_id, INTEGER,intent(out) item_number,  
 CHARACTER(len=*),dimension(:),intent(out) item_name,  
 CHARACTER(len=*),dimension(:),intent(out) item_class)`

Definition at line 1233 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXtype, and NXUmodule::status.

Referenced by NXUmodule::NXUfindclass(), NXUmodule::NXUfinddata(), NXUmodule::NXUfindgroup(), NXUmodule::NXUresumelink(), and NXUmodule::NXUsearchgroup().

**5.87.1.36** `INTEGER NXmodule::NXinitattrdir (TYPE(NXhandle),intent(inout)  
file_id)`

Definition at line 1281 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.37** `INTEGER NXmodule::NXinitgroupdir (TYPE(NXhandle),intent(inout)  
file_id)`

Definition at line 1222 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUfindaxis(), and NXUmodule::NXUfindsignal().

**5.87.1.38** `function NXmodule::NXmakedata (TYPE(NXhandle),intent(inout)  
file_id, CHARACTER(len=*),intent(in) data_name,  
 INTEGER,intent(in) data_type, INTEGER,dimension,intent(in)  
data_rank, INTEGER,dimension(:),intent(in) data_dimensions,  
 INTEGER,dimension,intent(in),optional compress_type,  
 INTEGER,dimension(:),intent(in),optional chunk_size)`

Definition at line 208 of file NXmodule.f90.

References NXUmodule::data\_dimensions, NXUmodule::data\_name, NXUmodule::data\_rank, NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUpreparedata().

**5.87.1.39** INTEGER NXmodule::NXmakegroup (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *group\_name*, CHARACTER(len=\*),intent(in) *group\_class*)

Definition at line 171 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUwritegroup().

**5.87.1.40** INTEGER NXmodule::NXmakelink (TYPE(NXhandle),intent(inout) *file\_id*, TYPE(NXlink),intent(in) *link*)

Definition at line 1190 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.41** INTEGER NXmodule::NXopen (CHARACTER(len=\*),intent(in) *file\_name*, INTEGER,intent(in) *access\_method*, TYPE(NXhandle),intent(out) *file\_id*)

Definition at line 134 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.42** INTEGER NXmodule::NXopendata (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *data\_name*)

Definition at line 239 of file NXmodule.f90.

References NXUmodule::data\_name, NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUfindaxis(), NXUmodule::NXUfindsignal(), NXUmodule::NXUpreparedata(), and NXUmodule::NXUsearchgroup().

**5.87.1.43** INTEGER NXmodule::NXopengroup (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *group\_name*, CHARACTER(len=\*),intent(in) *group\_class*)

Definition at line 184 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUresumelink(), NXUmodule::NXUsearchgroup(), and NXUmodule::NXUwritegroup().

**5.87.1.44** INTEGER NXmodule::NXputchar (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *data*)

Definition at line 900 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.45** `function NXmodule::NXputcharattr (TYPE(NXhandle),intent(inout)  
file_id, CHARACTER(len=*),intent(in) name,  
 CHARACTER(len=*),intent(in) value, INTEGER,intent(in),optional  
value_length, INTEGER,intent(in),optional value_type)`

Definition at line 1075 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.46** `INTEGER NXmodule::NXputi1 (TYPE(NXhandle),intent(inout)  
file_id, INTEGER(KIND=NXi1),dimension(:),intent(in) data)`

Definition at line 840 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.47** `function NXmodule::NXputi1attr (TYPE(NXhandle),intent(inout)  
file_id, CHARACTER(len=*),intent(in) name,  
 INTEGER(KIND=NXi1),intent(in) value, INTEGER,intent(in),optional  
value_length, INTEGER,intent(in),optional value_type)`

Definition at line 995 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.48** `INTEGER NXmodule::NXputi1slab (TYPE(NXhandle),intent(inout)  
file_id, INTEGER(KIND=NXi1),dimension(:),intent(in)  
data, INTEGER,dimension(:),intent(in) data_start,  
 INTEGER,dimension(:),intent(in) data_size)`

Definition at line 916 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.49** `INTEGER NXmodule::NXputi2 (TYPE(NXhandle),intent(inout)  
file_id, INTEGER(KIND=NXi2),dimension(:),intent(in) data)`

Definition at line 852 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.50** `function NXmodule::NXputi2attr (TYPE(NXhandle),intent(inout)  
file_id, CHARACTER(len=*),intent(in) name,  
 INTEGER(KIND=NXi2),intent(in) value, INTEGER,intent(in),optional  
value_length, INTEGER,intent(in),optional value_type)`

Definition at line 1011 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.51** `INTEGER NXmodule::NXputi2slab (TYPE(NXhandle),intent(inout)  
file_id, INTEGER(KIND=NXi2),dimension(:),intent(in)  
data, INTEGER,dimension(:),intent(in) data_start,  
 INTEGER,dimension(:),intent(in) data_size)`

Definition at line 931 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.52** `INTEGER NXmodule::NXputi4 (TYPE(NXhandle),intent(inout)  
file_id, INTEGER(KIND=NXi4),dimension(:),intent(in) data)`

Definition at line 864 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.53** `function NXmodule::NXputi4attr (TYPE(NXhandle),intent(inout)  
file_id, CHARACTER(len=*),intent(in) name,  
 INTEGER(KIND=NXi4),intent(in) value, INTEGER,intent(in),optional  
value_length, INTEGER,intent(in),optional value_type)`

Definition at line 1027 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.54** `INTEGER NXmodule::NXputi4slab (TYPE(NXhandle),intent(inout)  
file_id, INTEGER(KIND=NXi4),dimension(:),intent(in)  
data, INTEGER,dimension(:),intent(in) data_start,  
 INTEGER,dimension(:),intent(in) data_size)`

Definition at line 946 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.55** `INTEGER NXmodule::NXputr4 (TYPE(NXhandle),intent(inout)  
file_id, REAL(KIND=NXr4),dimension(:),intent(in) data)`

Definition at line 876 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.56** `function NXmodule::NXputr4attr (TYPE(NXhandle),intent(inout)  
file_id, CHARACTER(len=*),intent(in) name,  
 REAL(KIND=NXr4),intent(in) value, INTEGER,intent(in),optional  
value_length, INTEGER,intent(in),optional value_type)`

Definition at line 1043 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.57** `INTEGER NXmodule::NXputr4slab (TYPE(NXhandle),intent(inout) file_id, REAL(KIND=NXr4),dimension(:),intent(in) data, INTEGER,dimension(:),intent(in) data_start, INTEGER,dimension(:),intent(in) data_size)`

Definition at line 961 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.58** `INTEGER NXmodule::NXputr8 (TYPE(NXhandle),intent(inout) file_id, REAL(KIND=NXr8),dimension(:),intent(in) data)`

Definition at line 888 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.59** `function NXmodule::NXputr8attr (TYPE(NXhandle),intent(inout) file_id, CHARACTER(len=*),intent(in) name, REAL(KIND=NXr8),intent(in) value, INTEGER,intent(in),optional value_length, INTEGER,intent(in),optional value_type)`

Definition at line 1059 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

**5.87.1.60** `INTEGER NXmodule::NXputr8slab (TYPE(NXhandle),intent(inout) file_id, REAL(KIND=NXr8),dimension(:),intent(in) data, INTEGER,dimension(:),intent(in) data_start, INTEGER,dimension(:),intent(in) data_size)`

Definition at line 976 of file NXmodule.f90.

References NXUmodule::file\_id, NXUmodule::NXdims, NXUmodule::NXrank, NXUmodule::NXtype, and NXUmodule::status.

**5.87.1.61** `INTEGER,dimension(size(dimensions) NXmodule::NXreverse (INTEGER,intent(in) rank, INTEGER,dimension(:),intent(in) dimensions)`

Definition at line 1324 of file NXmodule.f90.

**5.87.1.62** `LOGICAL NXmodule::NXsameID (TYPE(NXhandle),intent(inout) file_id, TYPE(NXlink),intent(in) first_id, TYPE(NXlink),intent(in) second_id)`

Definition at line 1172 of file NXmodule.f90.

References NXUmodule::file\_id, and NXUmodule::status.

Referenced by NXUmodule::NXUresumelink(), and NXUmodule::NXUsearchgroup().

## 5.87.2 Variable Documentation

### 5.87.2.1 `INTEGER(KIND=NXi1),dimension(:),allocatable NXmodule::buffer_i1`

Definition at line 91 of file NXmodule.f90.

### 5.87.2.2 `INTEGER(KIND=NXi2),dimension(:),allocatable NXmodule::buffer_i2`

Definition at line 92 of file NXmodule.f90.

### 5.87.2.3 `INTEGER(KIND=NXi4),dimension(:),allocatable NXmodule::buffer_i4`

Definition at line 93 of file NXmodule.f90.

### 5.87.2.4 `REAL(KIND=NXr4),dimension(:),allocatable NXmodule::buffer_r4`

Definition at line 94 of file NXmodule.f90.

### 5.87.2.5 `REAL(KIND=NXr8),dimension(:),allocatable NXmodule::buffer_r8`

Definition at line 95 of file NXmodule.f90.

### 5.87.2.6 `CHARACTER(len=*),parameter NXmodule::NeXus_version`

Definition at line 33 of file NXmodule.f90.

### 5.87.2.7 `INTEGER,parameter NXmodule::NX_CHAR = 4`

Definition at line 46 of file NXmodule.f90.

Referenced by `NXUmodule::NXUreadchar()`, and `NXUmodule::NXUwritechar()`.

### 5.87.2.8 `INTEGER,parameter NXmodule::NX_COMP_HUF = 400`

Definition at line 59 of file NXmodule.f90.

Referenced by `NXUmodule::NXUsetcompress()`.

### 5.87.2.9 `INTEGER,parameter NXmodule::NX_COMP_LZW = 200`

Definition at line 57 of file NXmodule.f90.

Referenced by `NXUmodule::NXUsetcompress()`.

### 5.87.2.10 `INTEGER,parameter NXmodule::NX_COMP_NONE = 100`

Definition at line 56 of file NXmodule.f90.

Referenced by `NXUmodule::NXUpreparedata()`, and `NXUmodule::NXUsetcompress()`.

**5.87.2.11 INTEGER,parameter NXmodule::NX\_COMP\_RLE = 300**

Definition at line 58 of file NXmodule.f90.

Referenced by NXUmodule::NXUsetcompress().

**5.87.2.12 INTEGER,parameter NXmodule::NX\_EOD = -1**

Definition at line 44 of file NXmodule.f90.

Referenced by NXUmodule::NXUfindattr(), NXUmodule::NXUfindaxis(), NXUmodule::NXUfindclass(), NXUmodule::NXUfinddata(), NXUmodule::NXUfindgroup(), NXUmodule::NXUfindsignal(), NXUmodule::NXUpreparedata(), NXUmodule::NXUresumelink(), NXUmodule::NXUsearchgroup(), NXUmodule::NXUwrite1Dcarray(), NXUmodule::NXUwrite2Di4array(), NXUmodule::NXUwrite2Dr4array(), NXUmodule::NXUwrite2Dr8array(), NXUmodule::NXUwrite3Di4array(), NXUmodule::NXUwrite3Dr4array(), NXUmodule::NXUwrite3Dr8array(), NXUmodule::NXUwrite4Dr8array(), NXUmodule::NXUwritechar(), NXUmodule::NXUwritei4(), NXUmodule::NXUwritei4array(), NXUmodule::NXUwriter4(), NXUmodule::NXUwriter4array(), NXUmodule::NXUwriter8(), and NXUmodule::NXUwriter8array().

**5.87.2.13 INTEGER,parameter NXmodule::NX\_ERROR = 0**

Definition at line 43 of file NXmodule.f90.

Referenced by NXUmodule::NXUfindattr(), NXUmodule::NXUfindaxis(), NXUmodule::NXUfindclass(), NXUmodule::NXUfinddata(), NXUmodule::NXUfindgroup(), NXUmodule::NXUfindsignal(), NXUmodule::NXUpreparedata(), NXUmodule::NXUreadchar(), NXUmodule::NXUreadi4(), NXUmodule::NXUreadr4(), NXUmodule::NXUreadr8(), NXUmodule::NXUresumelink(), NXUmodule::NXUsearchgroup(), and NXUmodule::NXUsetcompress().

**5.87.2.14 INTEGER,parameter NXmodule::NX\_FLOAT32 = 5**

Definition at line 47 of file NXmodule.f90.

Referenced by NXUmodule::NXUread2Dr4array(), NXUmodule::NXUread3Dr4array(), NXUmodule::NXUreadr4(), NXUmodule::NXUreadr4array(), NXUmodule::NXUwrite2Dr4array(), NXUmodule::NXUwrite3Dr4array(), NXUmodule::NXUwriter4(), and NXUmodule::NXUwriter4array().

**5.87.2.15 INTEGER,parameter NXmodule::NX\_FLOAT64 = 6**

Definition at line 48 of file NXmodule.f90.

Referenced by NXUmodule::NXUread2Dr8array(), NXUmodule::NXUread3Dr8array(), NXUmodule::NXUreadr8(), NXUmodule::NXUreadr8array(), NXUmodule::NXUwrite2Dr8array(), NXUmodule::NXUwrite3Dr8array(), NXUmodule::NXUwrite4Dr8array(), NXUmodule::NXUwriter8(), and NXUmodule::NXUwriter8array().

**5.87.2.16 INTEGER,parameter NXmodule::NX\_INT16 = 22**

Definition at line 51 of file NXmodule.f90.



**5.87.2.17 INTEGER,parameter NXmodule::NX\_INT32 = 24**

Definition at line 53 of file NXmodule.f90.

Referenced by NXUmodule::NXUread2Di4array(), NXUmodule::NXUread3Di4array(), NXUmodule::NXUreadi4(), NXUmodule::NXUreadi4array(), NXUmodule::NXUwrite2Di4array(), NXUmodule::NXUwrite3Di4array(), NXUmodule::NXUwritei4(), and NXUmodule::NXUwritei4array().

**5.87.2.18 INTEGER,parameter NXmodule::NX\_INT8 = 20**

Definition at line 49 of file NXmodule.f90.

Referenced by NXUmodule::NXUread1Dcarray(), and NXUmodule::NXUwrite1Dcarray().

**5.87.2.19 INTEGER,parameter NXmodule::NX\_MAXNAMELEN = 64**

Definition at line 64 of file NXmodule.f90.

**5.87.2.20 INTEGER,parameter NXmodule::NX\_MAXRANK = 32**

Definition at line 63 of file NXmodule.f90.

**5.87.2.21 INTEGER,parameter NXmodule::NX\_MAXSTACK = 50**

Definition at line 65 of file NXmodule.f90.

**5.87.2.22 INTEGER,parameter NXmodule::NX\_OK = 1**

Definition at line 42 of file NXmodule.f90.

Referenced by NXUmodule::NXUfindattr(), NXUmodule::NXUfindaxis(), NXUmodule::NXUfindclass(), NXUmodule::NXUfinddata(), NXUmodule::NXUfindgroup(), NXUmodule::NXUfindlink(), NXUmodule::NXUfindsignal(), NXUmodule::NXUpreparedata(), NXUmodule::NXUread1Dcarray(), NXUmodule::NXUread2Di4array(), NXUmodule::NXUread2Dr4array(), NXUmodule::NXUread2Dr8array(), NXUmodule::NXUread3Di4array(), NXUmodule::NXUread3Dr4array(), NXUmodule::NXUread3Dr8array(), NXUmodule::NXUreadchar(), NXUmodule::NXUreadi4(), NXUmodule::NXUreadi4array(), NXUmodule::NXUreadr4(), NXUmodule::NXUreadr4array(), NXUmodule::NXUreadr8(), NXUmodule::NXUreadr8array(), NXUmodule::NXUresumelink(), NXUmodule::NXUsearchgroup(), NXUmodule::NXUsetcompress(), NXUmodule::NXUwrite1Dcarray(), NXUmodule::NXUwrite2Di4array(), NXUmodule::NXUwrite2Dr4array(), NXUmodule::NXUwrite2Dr8array(), NXUmodule::NXUwrite3Di4array(), NXUmodule::NXUwrite3Dr4array(), NXUmodule::NXUwrite3Dr8array(), NXUmodule::NXUwrite4Dr8array(), NXUmodule::NXUwritechar(), NXUmodule::NXUwriteglobals(), NXUmodule::NXUwritegroup(), NXUmodule::NXUwritei4(), NXUmodule::NXUwritei4array(), NXUmodule::NXUwriter4(), NXUmodule::NXUwriter4array(), NXUmodule::NXUwriter8(), and NXUmodule::NXUwriter8array().

**5.87.2.23 INTEGER,parameter NXmodule::NX\_UINT16 = 23**

Definition at line 52 of file NXmodule.f90.

**5.87.2.24** `INTEGER,parameter NXmodule::NX_UINT32 = 25`

Definition at line 54 of file NXmodule.f90.

**5.87.2.25** `INTEGER,parameter NXmodule::NX_UINT8 = 21`

Definition at line 50 of file NXmodule.f90.

**5.87.2.26** `INTEGER,parameter NXmodule::NX_UNLIMITED = -1`

Definition at line 61 of file NXmodule.f90.

**5.87.2.27** `INTEGER,parameter NXmodule::NXACC_CREATE = 3`

Definition at line 37 of file NXmodule.f90.

**5.87.2.28** `INTEGER,parameter NXmodule::NXACC_CREATE4 = 4`

Definition at line 38 of file NXmodule.f90.

**5.87.2.29** `INTEGER,parameter NXmodule::NXACC_CREATE5 = 5`

Definition at line 39 of file NXmodule.f90.

**5.87.2.30** `INTEGER,parameter NXmodule::NXACC_CREATEXML = 6`

Definition at line 40 of file NXmodule.f90.

**5.87.2.31** `INTEGER,parameter NXmodule::NXACC_RDWR = 2`

Definition at line 36 of file NXmodule.f90.

**5.87.2.32** `INTEGER,parameter NXmodule::NXACC_READ = 1`

Definition at line 35 of file NXmodule.f90.

**5.87.2.33** `INTEGER NXmodule::NXdims`

Definition at line 96 of file NXmodule.f90.

Referenced by `NXUmodule::NXUfindaxis()`, `NXUmodule::NXUfindsignal()`, and `NXUmodule::NXUpreparedata()`.

**5.87.2.34** `INTEGER,parameter NXmodule::NXi1 = selected_int_kind(2)`

Definition at line 85 of file NXmodule.f90.

**5.87.2.35 INTEGER,parameter NXmodule::NXi2 = selected\_int\_kind(4)**

Definition at line 86 of file NXmodule.f90.

**5.87.2.36 INTEGER,parameter NXmodule::NXi4 = selected\_int\_kind(8)**

Definition at line 87 of file NXmodule.f90.

**5.87.2.37 INTEGER,parameter NXmodule::NXr4 = kind(1.0)**

Definition at line 88 of file NXmodule.f90.

**5.87.2.38 INTEGER,parameter NXmodule::NXr8 = kind(1.0D0)**

Definition at line 89 of file NXmodule.f90.

**5.87.2.39 INTEGER NXmodule::NXrank**

Definition at line 96 of file NXmodule.f90.

Referenced by NXUmodule::NXUfindaxis(), NXUmodule::NXUfindsignal(), and NXUmodule::NXUpreparedata().

**5.87.2.40 INTEGER NXmodule::NXsize**

Definition at line 96 of file NXmodule.f90.

**5.87.2.41 INTEGER NXmodule::NXtype**

Definition at line 96 of file NXmodule.f90.

Referenced by NXUmodule::NXUfindaxis(), NXUmodule::NXUfindsignal(), and NXUmodule::NXUpreparedata().

## 5.88 NXU module Namespace Reference

### Classes

- interface NXUwritedata
- interface NXUreaddata
- struct data\_type

### Functions

- INTEGER NXUwriteglobals (file\_id, user, affiliation, address, phone, fax, email)
- INTEGER NXUwritegroup (file\_id, group\_name, group\_class)
- INTEGER NXUwritei4 (file\_id, data\_name, data, units)
- INTEGER NXUwriter4 (file\_id, data\_name, data, units)
- INTEGER NXUwriter8 (file\_id, data\_name, data, units)
- INTEGER NXUwritechar (file\_id, data\_name, data, units)
- INTEGER NXUwritei4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUwriter4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUwriter8array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUwrite2Di4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUwrite2Dr4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUwrite2Dr8array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUwrite3Di4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUwrite3Dr4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUwrite3Dr8array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUreadi4 (file\_id, data\_name, data, units)
- INTEGER NXUreadr4 (file\_id, data\_name, data, units)
- INTEGER NXUreadr8 (file\_id, data\_name, data, units)
- INTEGER NXUreadchar (file\_id, data\_name, data, units)
- INTEGER NXUreadi4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUreadr4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUreadr8array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUread2Di4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUread2Dr4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUread2Dr8array (file\_id, data\_name, data, units, data\_start, data\_size)

- INTEGER NXUread3Di4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUread3Dr4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUread3Dr8array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUread4Dr8array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUread4Dr4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUread4Di4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUwrite4Dr4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUwrite4Dr8array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUwrite4Di4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUwrite1Dcarray (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUread1Dcarray (file\_id, data\_name, data, units, data\_start, data\_size)
- function NXUsetcompress (file\_id, compress\_type, compress\_size)
- INTEGER NXUfindgroup (file\_id, group\_name, group\_class)
- function NXUfindclass (file\_id, group\_class, group\_name, find\_index)
- INTEGER NXUfinddata (file\_id, data\_name)
- INTEGER NXUfindattr (file\_id, attr\_name)
- INTEGER NXUfindsignal (file\_id, signal, data\_name, data\_rank, data\_type, data\_dimensions)
- INTEGER NXUfindaxis (file\_id, axis, primary, data\_name, data\_type, data\_dimensions)
- INTEGER NXUfindlink (file\_id, group\_id, group\_class)
- INTEGER NXUresumelink (file\_id, group\_id)
- INTEGER NXUsearchgroup (file\_id, group\_id, data\_id, group\_class)
- INTEGER NXUpreparedata (file\_id, data\_name, data\_type, data\_rank, data\_dimensions)

## Variables

- INTEGER NXcompress\_type = NX\_COMP\_NONE
- INTEGER NXcompress\_size = 1000
- INTEGER group\_level
- INTEGER NXrank
- INTEGER NXdims
- INTEGER NXtype
- INTEGER NXsize
- TYPE(NXhandle) file\_id
- CHARACTER(len=\*) data\_name
- INTEGER data\_type
- INTEGER data\_rank
- INTEGER data\_dimensions
- INTEGER status

## 5.88.1 Function Documentation

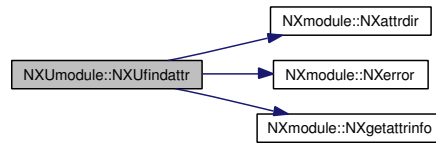
### 5.88.1.1 INTEGER NXUmodule::NXUfindattr (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *attr\_name*)

Definition at line 1180 of file NXUmodule.f90.

References `file_id`, `NXmodule::NX_EOD`, `NXmodule::NX_ERROR`, `NXmodule::NX_OK`, `NXmodule::NXattrdir()`, `NXmodule::NXerror()`, `NXmodule::NXgetattrinfo()`, and `status`.

Referenced by `NXUfindaxis()`, `NXUfindsignal()`, `NXUwrite1Dcarray()`, `NXUwrite2Di4array()`, `NXUwrite2Dr4array()`, `NXUwrite2Dr8array()`, `NXUwrite3Di4array()`, `NXUwrite3Dr4array()`, `NXUwrite3Dr8array()`, `NXUwrite4Dr8array()`, `NXUwritechar()`, `NXUwritei4()`, `NXUwritei4array()`, `NXUwriter4()`, `NXUwriter4array()`, `NXUwriter8()`, and `NXUwriter8array()`.

Here is the call graph for this function:

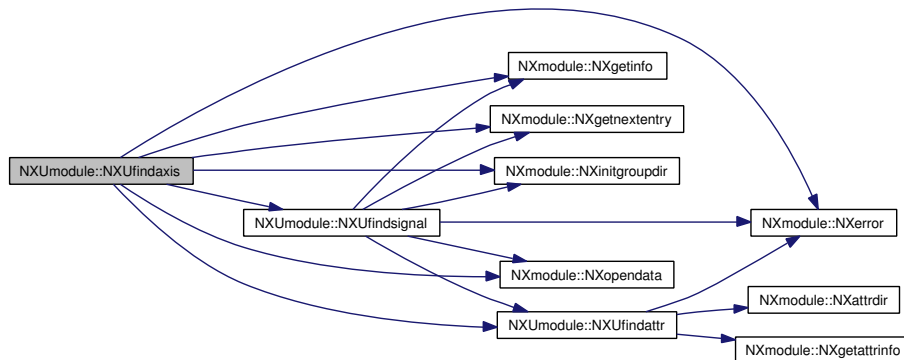


### 5.88.1.2 INTEGER NXUmodule::NXUfindaxis (TYPE(NXhandle),intent(inout) *file\_id*, INTEGER,intent(in) *axis*, INTEGER,intent(in) *primary*, CHARACTER(len=\*),intent(out) *data\_name*, INTEGER,intent(out) *data\_type*, INTEGER,dimension(nx\_maxrank),intent(out) *data\_dimensions*)

Definition at line 1256 of file NXUmodule.f90.

References `data_dimensions`, `data_name`, `data_rank`, `file_id`, `NXmodule::NX_EOD`, `NXmodule::NX_ERROR`, `NXmodule::NX_OK`, `NXmodule::NXdims`, `NXmodule::NXerror()`, `NXmodule::NXgetinfo()`, `NXmodule::NXgetnextentry()`, `NXmodule::NXinitgroupdir()`, `NXmodule::NXopendata()`, `NXmodule::NXrank`, `NXmodule::NXtype`, `NXUfindattr()`, `NXUfindsignal()`, and `status`.

Here is the call graph for this function:

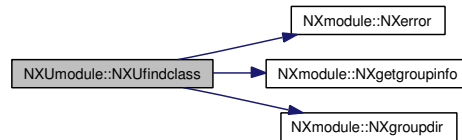


**5.88.1.3** function NXUmodule::NXUfindclass (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *group\_class*, CHARACTER(len=\*),intent(out) *group\_name*, INTEGER,intent(in),optional *find\_index*)

Definition at line 1106 of file NXUmodule.f90.

References *file\_id*, NXmodule::NX\_EOD, NXmodule::NX\_ERROR, NXmodule::NX\_OK, NXmodule::NXerror(), NXmodule::NXgetgroupinfo(), NXmodule::NXgroupdir(), and status.

Here is the call graph for this function:



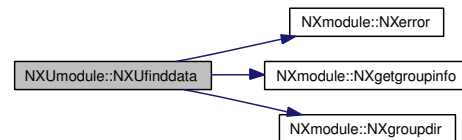
**5.88.1.4** INTEGER NXUmodule::NXUfinddata (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *data\_name*)

Definition at line 1145 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_EOD, NXmodule::NX\_ERROR, NXmodule::NX\_OK, NXmodule::NXerror(), NXmodule::NXgetgroupinfo(), NXmodule::NXgroupdir(), and status.

Referenced by NXUpreparedata().

Here is the call graph for this function:



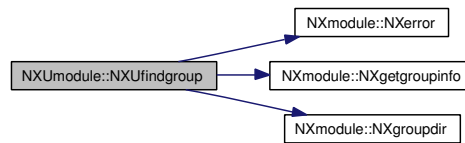
**5.88.1.5** INTEGER NXUmodule::NXUfindgroup (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *group\_name*, CHARACTER(len=\*),intent(out),optional *group\_class*)

Definition at line 1069 of file NXUmodule.f90.

References *file\_id*, NXmodule::NX\_EOD, NXmodule::NX\_ERROR, NXmodule::NX\_OK, NXmodule::NXerror(), NXmodule::NXgetgroupinfo(), NXmodule::NXgroupdir(), and status.

Referenced by IXMfileio::IXBfindGroup().

Here is the call graph for this function:

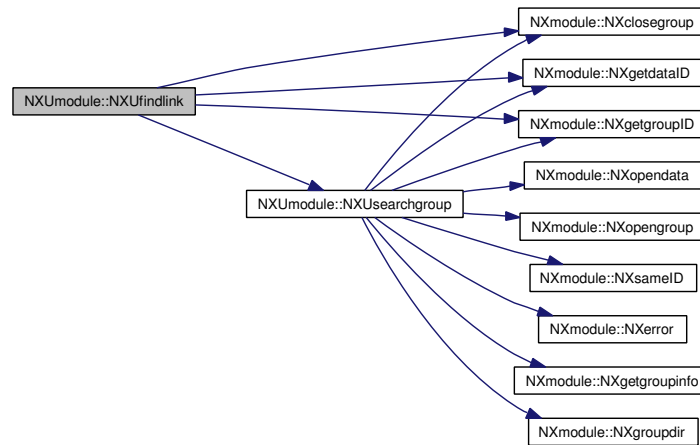


**5.88.1.6** INTEGER NXUmodule::NXUfindlink (TYPE(NXhandle),intent(inout) *file\_id*, TYPE(NXlink),intent(out) *group\_id*, CHARACTER(len=\*),intent(in),optional *group\_class*)

Definition at line 1367 of file NXUmodule.f90.

References *file\_id*, *group\_level*, NXmodule::NX\_OK, NXmodule::NXclosegroup(), NXmodule::NXgetdataID(), NXmodule::NXgetgroupID(), NXUsearchgroup(), and status.

Here is the call graph for this function:



**5.88.1.7** INTEGER NXUmodule::NXUfindsignal (TYPE(NXhandle),intent(inout) *file\_id*, INTEGER,intent(in) *signal*, CHARACTER(len=\*),intent(out) *data\_name*, INTEGER,intent(out) *data\_rank*, INTEGER,intent(out) *data\_type*, INTEGER,dimension(:),intent(out) *data\_dimensions*)

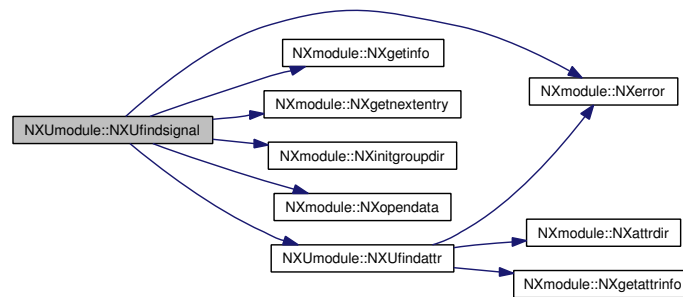
Definition at line 1207 of file NXUmodule.f90.

References *data\_dimensions*, *data\_name*, *data\_rank*, *file\_id*, NXmodule::NX\_EOD, NXmodule::NX\_ERROR, NXmodule::NX\_OK, NXmodule::NXdims, NXmodule::NXerror(), NXmodule::NXgetinfo(), NXmodule::NXgetnextentry(), NXmodule::NXinitgroupdir(), NXmodule::NXopendata(), NXmodule::NXrank, NXmodule::NXtype, NXUfindattr(), and status.

Referenced by NXUfindaxis().

Here is the call graph for this function:





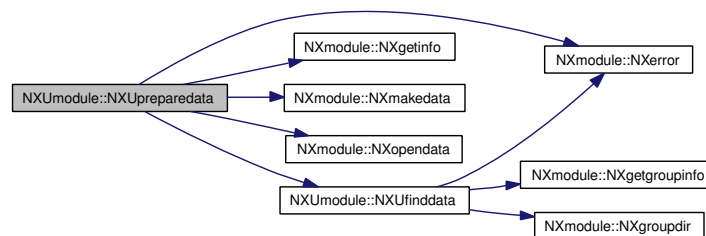
#### 5.88.1.8 INTEGER NXUmodule::NXUpreparedata (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *data\_name*, INTEGER,intent(in) *data\_type*, INTEGER,intent(in) *data\_rank*, INTEGER,dimension(:),intent(in) *data\_dimensions*)

Definition at line 1497 of file NXUmodule.f90.

References *data\_dimensions*, *data\_name*, *data\_rank*, *file\_id*, NXmodule::NX\_COMP\_NONE, NXmodule::NX\_EOD, NXmodule::NX\_ERROR, NXmodule::NX\_OK, NXcompress\_size, NXcompress\_type, NXmodule::NXdims, NXmodule::NXerror(), NXmodule::NXgetinfo(), NXmodule::NXmakedata(), NXmodule::NXopendata(), NXmodule::NXrank, NXmodule::NXtype, NXUfinddata(), and status.

Referenced by NXUwrite1Dcarray(), NXUwrite2Di4array(), NXUwrite2Dr4array(), NXUwrite2Dr8array(), NXUwrite3Di4array(), NXUwrite3Dr4array(), NXUwrite3Dr8array(), NXUwrite4Dr8array(), NXUwritechar(), NXUwritei4(), NXUwritei4array(), NXUwriter4(), NXUwriter4array(), NXUwriter8(), and NXUwriter8array().

Here is the call graph for this function:



#### 5.88.1.9 INTEGER NXUmodule::NXUread1Dcarray (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *data\_name*, character(len=\*),dimension(:),pointer *data*, CHARACTER(len=\*),intent(out),optional *units*, INTEGER,dimension(:),intent(in),optional *data\_start*, INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 996 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_INT8, NXmodule::NX\_OK, and status.

**5.88.1.10** INTEGER NXUmodule::NXUread2Di4array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*, IN-  
 TEGER(kind=NXi4),dimension(:,:),pointer *data*,  
 CHARACTER(len=\*),intent(out),optional *units*,  
 INTEGER,dimension(:,),intent(in),optional *data\_start*,  
 INTEGER,dimension(:,),intent(in),optional *data\_size*)

Definition at line 634 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_INT32, NXmodule::NX\_OK, and status.

**5.88.1.11** INTEGER NXUmodule::NXUread2Dr4array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr4),dimension(:,:),pointer *data*,  
 CHARACTER(len=\*),intent(out),optional *units*,  
 INTEGER,dimension(:,),intent(in),optional *data\_start*,  
 INTEGER,dimension(:,),intent(in),optional *data\_size*)

Definition at line 671 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_FLOAT32, NXmodule::NX\_OK, and status.

**5.88.1.12** INTEGER NXUmodule::NXUread2Dr8array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr8),dimension(:,:),pointer *data*,  
 CHARACTER(len=\*),intent(out),optional *units*,  
 INTEGER,dimension(:,),intent(in),optional *data\_start*,  
 INTEGER,dimension(:,),intent(in),optional *data\_size*)

Definition at line 708 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_FLOAT64, NXmodule::NX\_OK, and status.

**5.88.1.13** INTEGER NXUmodule::NXUread3Di4array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*, IN-  
 TEGER(kind=NXi4),dimension(:,,:),pointer *data*,  
 CHARACTER(len=\*),intent(out),optional *units*,  
 INTEGER,dimension(:,),intent(in),optional *data\_start*,  
 INTEGER,dimension(:,),intent(in),optional *data\_size*)

Definition at line 745 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_INT32, NXmodule::NX\_OK, and status.

**5.88.1.14** INTEGER NXUmodule::NXUread3Dr4array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr4),dimension(:,:,:),pointer *data*,  
 CHARACTER(len=\*),intent(out),optional *units*,  
 INTEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 782 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_FLOAT32, NXmodule::NX\_OK, and *status*.

**5.88.1.15** INTEGER NXUmodule::NXUread3Dr8array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr8),dimension(:,:,:),pointer *data*,  
 CHARACTER(len=\*),intent(out),optional *units*,  
 INTEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 819 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_FLOAT64, NXmodule::NX\_OK, and *status*.

**5.88.1.16** INTEGER NXUmodule::NXUread4Di4array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*, IN-  
 TEGER(kind=NXi4),dimension(:,:,:),pointer *data*,  
 CHARACTER(len=\*),intent(out),optional *units*,  
 INTEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 888 of file NXUmodule.f90.

References *status*.

**5.88.1.17** INTEGER NXUmodule::NXUread4Dr4array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr4),dimension(:,:,:),pointer *data*,  
 CHARACTER(len=\*),intent(out),optional *units*,  
 INTEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 873 of file NXUmodule.f90.

References *status*.

**5.88.1.18** INTEGER NXUmodule::NXUread4Dr8array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr8),dimension(:,:,:),pointer *data*,  
 CHARACTER(len=\*),intent(out),optional *units*,  
 INTEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 858 of file NXUmodule.f90.

References status.

**5.88.1.19** INTEGER NXUmodule::NXUreadchar (TYPE(NXhandle),intent(inout)  
*file\_id*, CHARACTER(len=\*),intent(in) *data\_name*,  
 CHARACTER(len=\*),intent(out) *data*,  
 CHARACTER(len=\*),intent(out),optional *units*)

Definition at line 534 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_CHAR, NXmodule::NX\_ERROR,  
 NXmodule::NX\_OK, and status.

**5.88.1.20** INTEGER NXUmodule::NXUreadi4 (TYPE(NXhandle),intent(inout)  
*file\_id*, CHARACTER(len=\*),intent(in) *data\_name*,  
 INTEGER(kind=NXi4),intent(out) *data*,  
 CHARACTER(len=\*),intent(out),optional *units*)

Definition at line 456 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_ERROR, NXmodule::NX\_INT32,  
 NXmodule::NX\_OK, and status.

**5.88.1.21** INTEGER NXUmodule::NXUreadi4array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*, IN-  
 TEGER(kind=NXi4),dimension(:),pointer *data*,  
 CHARACTER(len=\*),intent(out),optional *units*,  
 INTEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 556 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_INT32, NXmodule::NX\_OK, and status.

**5.88.1.22** INTEGER NXUmodule::NXUreadr4 (TYPE(NXhandle),intent(inout)  
*file\_id*, CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr4),intent(out) *data*,  
 CHARACTER(len=\*),intent(out),optional *units*)

Definition at line 482 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_ERROR, NXmodule::NX\_FLOAT32,  
 NXmodule::NX\_OK, and status.

**5.88.1.23** INTEGER NXUmodule::NXUreadr4array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr4),dimension(:),pointer *data*,  
 CHARACTER(len=\*),intent(out),optional *units*,  
 INTEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 582 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_FLOAT32, NXmodule::NX\_OK, and status.

**5.88.1.24** INTEGER NXUmodule::NXUreadr8 (TYPE(NXhandle),intent(inout)  
*file\_id*, CHARACTER(len=\*),intent(in) *data\_* -  
*name*, REAL(kind=NXr8),intent(out) *data*,  
 CHARACTER(len=\*),intent(out),optional *units*)

Definition at line 508 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_ERROR, NXmodule::NX\_FLOAT64,  
 NXmodule::NX\_OK, and status.

**5.88.1.25** INTEGER NXUmodule::NXUreadr8array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr8),dimension(:),pointer *data*,  
 CHARACTER(len=\*),intent(out),optional *units*,  
 INTEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 608 of file NXUmodule.f90.

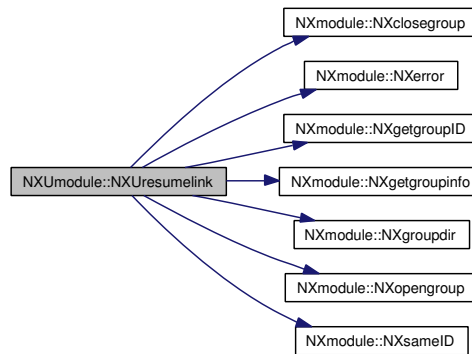
References *data\_name*, *file\_id*, NXmodule::NX\_FLOAT64, NXmodule::NX\_OK, and status.

**5.88.1.26** INTEGER NXUmodule::NXUresumelink  
 (TYPE(NXhandle),intent(inout) *file\_id*, TYPE(NXlink),intent(in)  
*group\_id*)

Definition at line 1390 of file NXUmodule.f90.

References *file\_id*, *group\_level*, NXmodule::NX\_EOD, NXmodule::NX\_ -  
 ERROR, NXmodule::NX\_OK, NXmodule::NXclosegroup(), NXmodule::NXerror(),  
 NXmodule::NXgetgroupID(), NXmodule::NXgetgroupinfo(), NXmodule::NXgroupdir(), NX-  
 module::NXopengroup(), NXmodule::NXsameID(), and status.

Here is the call graph for this function:



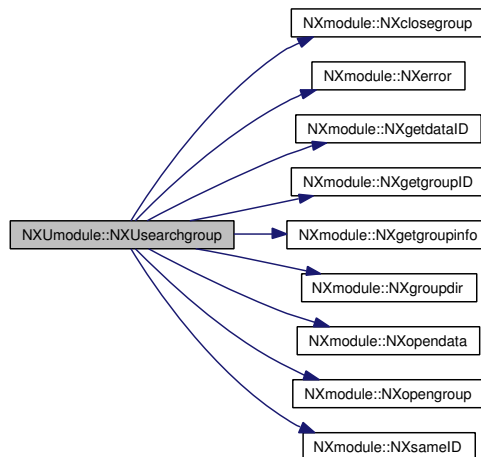
**5.88.1.27 INTEGER NXUmodule::NXUsearchgroup**  
 (TYPE(NXhandle),intent(inout) *file\_id*, TYPE(NXlink),intent(in)  
*group\_id*, TYPE(NXlink),intent(in) *data\_id*,  
 CHARACTER(len=\*),intent(in),optional *group\_class*)

Definition at line 1433 of file NXUmodule.f90.

References `file_id`, `group_level`, `NXmodule::NX_EOD`, `NXmodule::NX_ERROR`, `NXmodule::NX_OK`, `NXmodule::NXclosegroup()`, `NXmodule::NXerror()`, `NXmodule::NXgetdataID()`, `NXmodule::NXgetgroupID()`, `NXmodule::NXgetgroupinfo()`, `NXmodule::NXgroupdir()`, `NXmodule::NXopendata()`, `NXmodule::NXopengroup()`, `NXmodule::NXsameID()`, and `status`.

Referenced by `NXUfindlink()`.

Here is the call graph for this function:



**5.88.1.28 function NXUmodule::NXUsetcompress** (TYPE(NXhandle),intent(inout)  
*file\_id*, INTEGER,intent(in) *compress\_type*,  
 INTEGER,intent(in),optional *compress\_size*)

Definition at line 1048 of file NXUmodule.f90.

References NXmodule::NX\_COMP\_HUF, NXmodule::NX\_COMP\_LZW, NXmodule::NX\_COMP\_NONE, NXmodule::NX\_COMP\_RLE, NXmodule::NX\_ERROR, NXmodule::NX\_OK, NXcompress\_size, NXcompress\_type, NXmodule::NXerror(), and status.

Here is the call graph for this function:

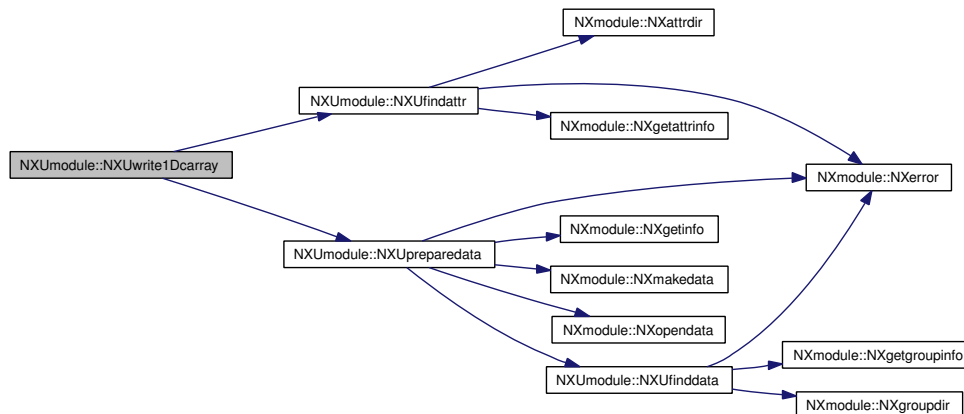


#### 5.88.1.29 INTEGER NXUmodule::NXUwrite1Dcarray (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *data\_name*, character(len=\*),dimension(:),intent(in) *data*, CHARACTER(len=\*),intent(in),optional *units*, IN- TEGER,dimension(:),intent(in),optional *data\_start*, INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 962 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_EOD, NXmodule::NX\_INT8, NXmodule::NX\_OK, NXUfindattr(), NXUpreparedata(), and status.

Here is the call graph for this function:

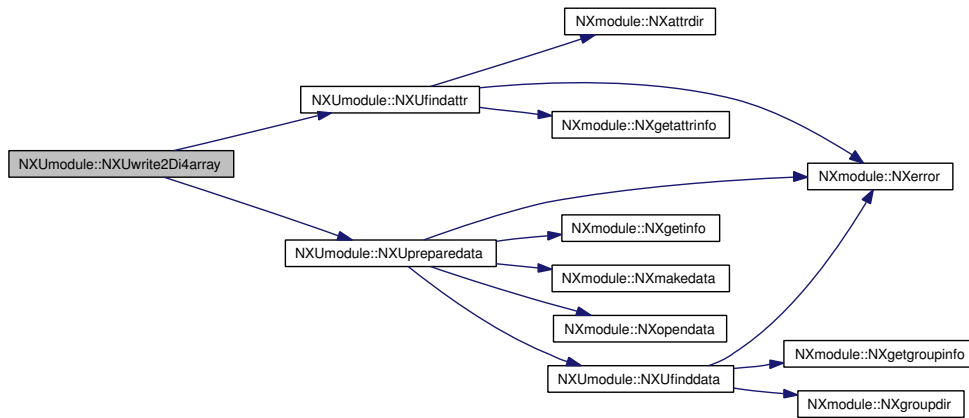


#### 5.88.1.30 INTEGER NXUmodule::NXUwrite2Di4array (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *data\_name*, IN- TEGER(kind=NXi4),dimension(:,:),intent(in) *data*, CHARACTER(len=\*),intent(in),optional *units*, IN- TEGER,dimension(:),intent(in),optional *data\_start*, INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 278 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_EOD, NXmodule::NX\_INT32, NXmodule::NX\_OK, NXUfindattr(), NXUpreparedata(), and status.

Here is the call graph for this function:

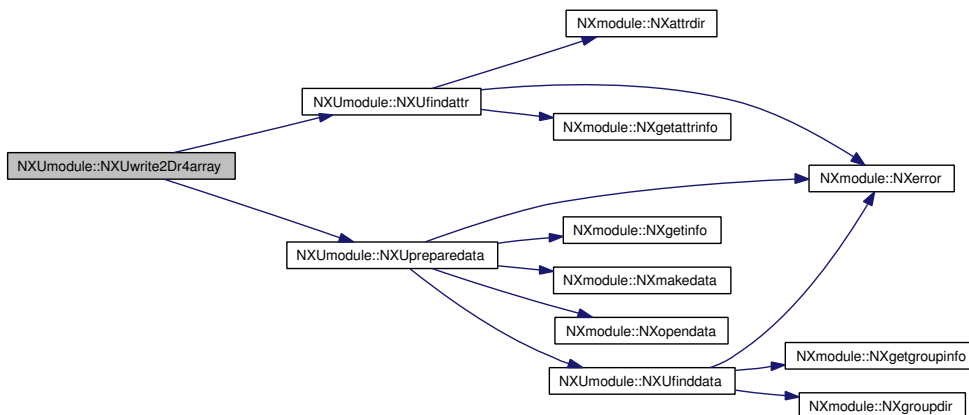


**5.88.1.31** INTEGER NXUmodule::NXUwrite2Dr4array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr4),dimension(:,:),intent(in) *data*,  
 CHARACTER(len=\*),intent(in),optional *units*, IN-  
 TEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 307 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_EOD, NXmodule::NX\_FLOAT32, NXmodule::NX\_OK, NXUfindattr(), NXUpreparedata(), and *status*.

Here is the call graph for this function:



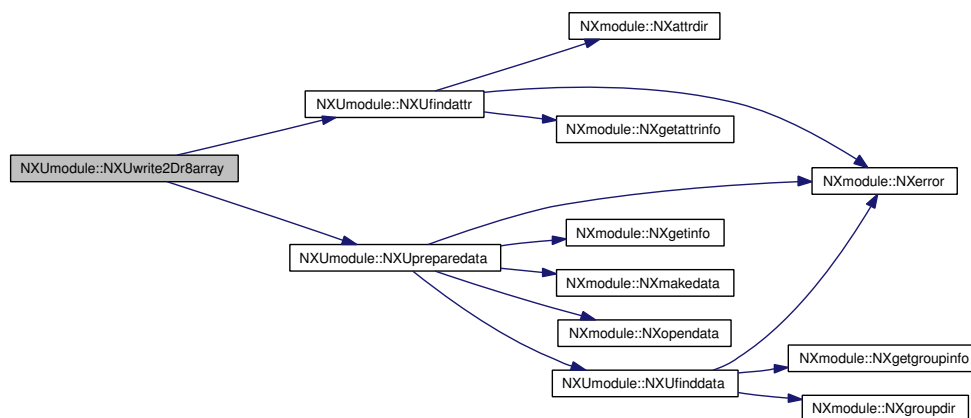


**5.88.1.32 INTEGER NXUmodule::NXUwrite2Dr8array**  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr8),dimension(:,:),intent(in) *data*,  
 CHARACTER(len=\*),intent(in),optional *units*, IN-  
 TEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 336 of file NXUmodule.f90.

References `data_name`, `file_id`, `NXmodule::NX_EOD`, `NXmodule::NX_FLOAT64`, `NXmodule::NX_OK`, `NXUfindattr()`, `NXUpreparedata()`, and `status`.

Here is the call graph for this function:

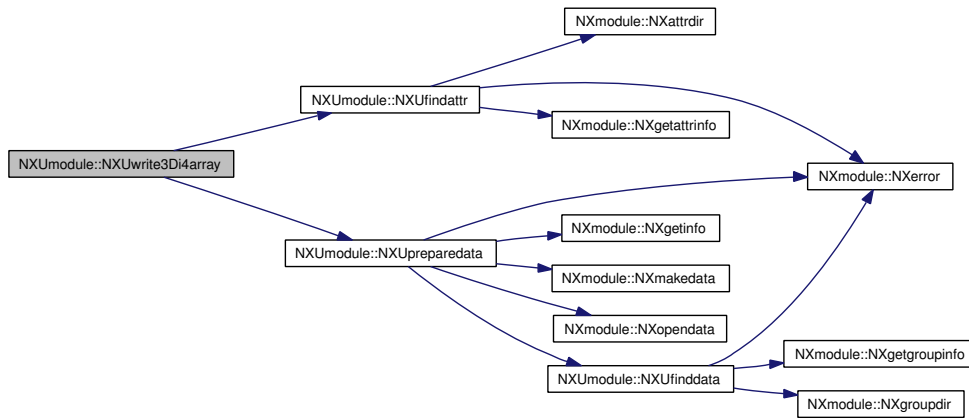


**5.88.1.33 INTEGER NXUmodule::NXUwrite3Di4array**  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*, IN-  
 TEGER(kind=NXi4),dimension(:,:,:),intent(in) *data*,  
 CHARACTER(len=\*),intent(in),optional *units*, IN-  
 TEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 365 of file NXUmodule.f90.

References `data_name`, `file_id`, `NXmodule::NX_EOD`, `NXmodule::NX_INT32`, `NXmodule::NX_OK`, `NXUfindattr()`, `NXUpreparedata()`, and `status`.

Here is the call graph for this function:

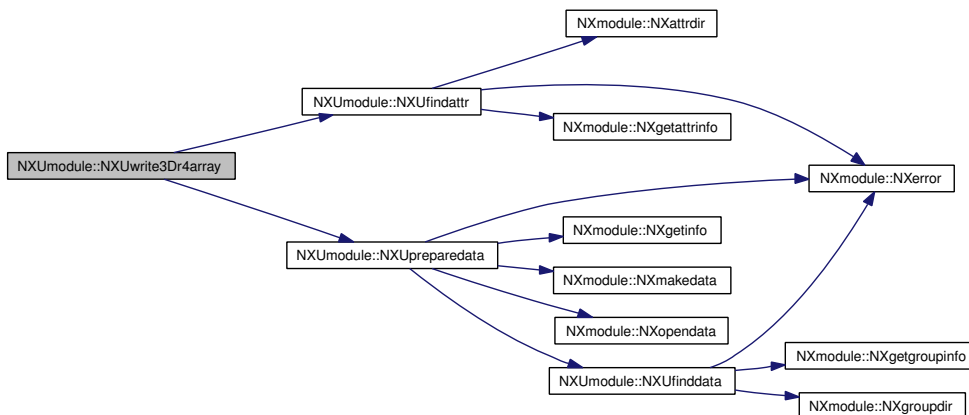


**5.88.1.34 INTEGER NXUmodule::NXUwrite3Dr4array**  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr4),dimension(:, :, :),intent(in) *data*,  
 CHARACTER(len=\*),intent(in),optional *units*, IN-  
 TEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 394 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_EOD, NXmodule::NX\_FLOAT32, NXmodule::NX\_OK, NXUfindattr(), NXUpreparedata(), and *status*.

Here is the call graph for this function:

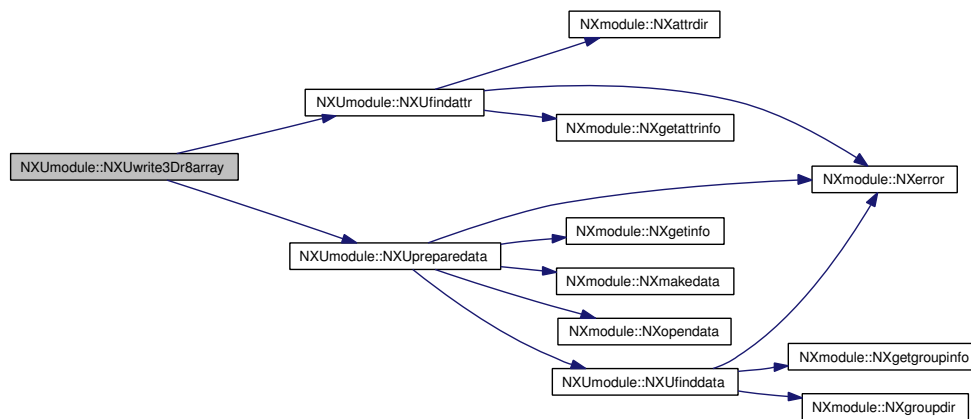


**5.88.1.35** INTEGER NXUmodule::NXUwrite3Dr8array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr8),dimension(:,:,:),intent(in) *data*,  
 CHARACTER(len=\*),intent(in),optional *units*, IN-  
 TEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 423 of file NXUmodule.f90.

References `data_name`, `file_id`, `NXmodule::NX_EOD`, `NXmodule::NX_FLOAT64`, `NXmodule::NX_OK`, `NXUfindattr()`, `NXUpreparedata()`, and `status`.

Here is the call graph for this function:



**5.88.1.36** INTEGER NXUmodule::NXUwrite4Di4array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*, INTE-  
 GER(kind=NXi4),dimension(:,:,:),intent(in) *data*,  
 CHARACTER(len=\*),intent(in),optional *units*, IN-  
 TEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 947 of file NXUmodule.f90.

References `status`.

**5.88.1.37** INTEGER NXUmodule::NXUwrite4Dr4array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr4),dimension(:,:,:),intent(in) *data*,  
 CHARACTER(len=\*),intent(in),optional *units*, IN-  
 TEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 903 of file NXUmodule.f90.

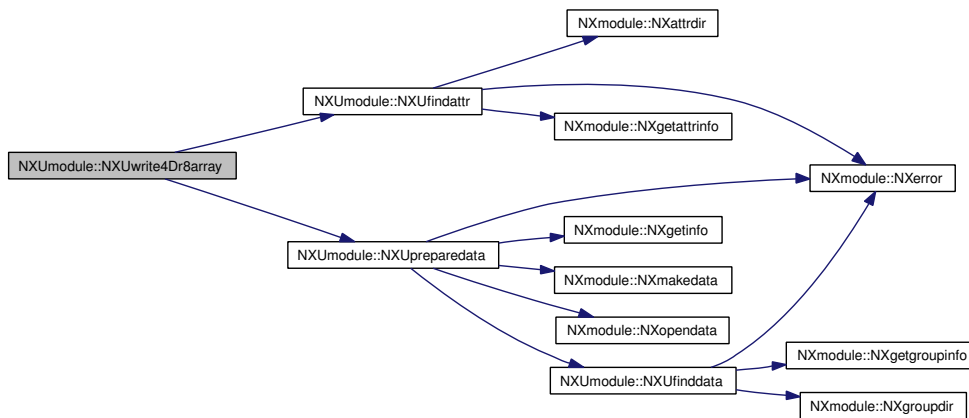
References `status`.

**5.88.1.38** INTEGER NXUmodule::NXUwrite4Dr8array  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *data\_name*,  
 REAL(kind=NXr8),dimension(:,:,:),intent(in) *data*,  
 CHARACTER(len=\*),intent(in),optional *units*, IN-  
 TEGER,dimension(:),intent(in),optional *data\_start*,  
 INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 917 of file NXUmodule.f90.

References `data_name`, `file_id`, `NXmodule::NX_EOD`, `NXmodule::NX_FLOAT64`,  
`NXmodule::NX_OK`, `NXUfindattr()`, `NXUpreparedata()`, and `status`.

Here is the call graph for this function:

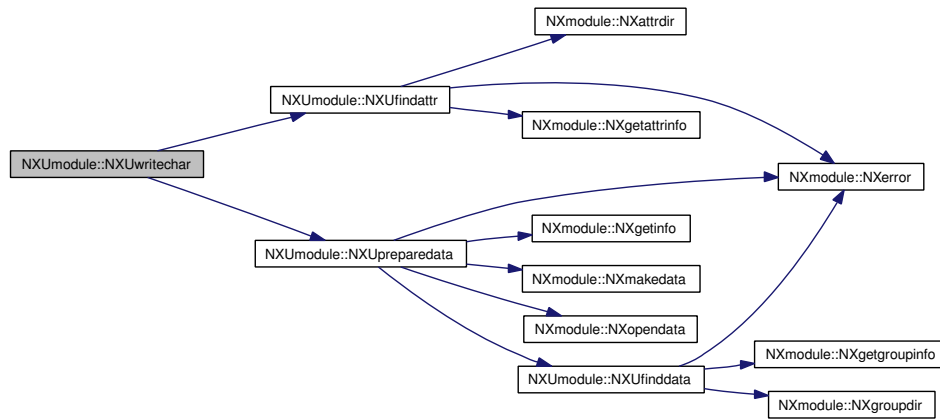


**5.88.1.39** INTEGER NXUmodule::NXUwritechar (TYPE(NXhandle),intent(inout)  
*file\_id*, CHARACTER(len=\*),intent(in) *data\_* -  
*name*, CHARACTER(len=\*),intent(in) *data*,  
 CHARACTER(len=\*),intent(in),optional *units*)

Definition at line 180 of file NXUmodule.f90.

References `data_name`, `file_id`, `NXmodule::NX_CHAR`, `NXmodule::NX_EOD`,  
`NXmodule::NX_OK`, `NXUfindattr()`, `NXUpreparedata()`, and `status`.

Here is the call graph for this function:



**5.88.1.40** INTEGER NXUmodule::NXUwriteglobals  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in),optional *user*,  
 CHARACTER(len=\*),intent(in),optional *affiliation*,  
 CHARACTER(len=\*),intent(in),optional *address*,  
 CHARACTER(len=\*),intent(in),optional *phone*,  
 CHARACTER(len=\*),intent(in),optional *fax*,  
 CHARACTER(len=\*),intent(in),optional *email*)

Definition at line 69 of file NXUmodule.f90.

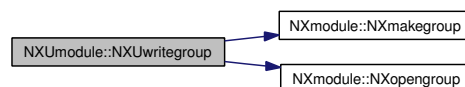
References *file\_id*, NXmodule::NX\_OK, and status.

**5.88.1.41** INTEGER NXUmodule::NXUwritegroup  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *group\_name*,  
 CHARACTER(len=\*),intent(in) *group\_class*)

Definition at line 105 of file NXUmodule.f90.

References *file\_id*, NXmodule::NX\_OK, NXmodule::NXmakegroup(), NXmodule::NXopengroup(), and status.

Here is the call graph for this function:

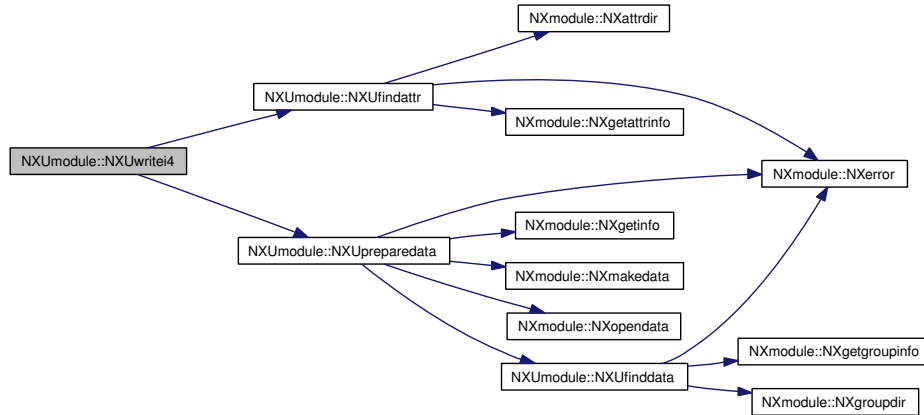


**5.88.1.42** INTEGER NXUmodule::NXUwritei4 (TYPE(NXhandle),intent(inout)  
*file\_id*, CHARACTER(len=\*),intent(in) *data\_* -  
*name*, INTEGER(kind=NXi4),intent(in) *data*,  
 CHARACTER(len=\*),intent(in),optional *units*)

Definition at line 123 of file NXUmodule.f90.

References `data_name`, `file_id`, `NXmodule::NX_EOD`, `NXmodule::NX_INT32`, `NXmodule::NX_OK`, `NXUfindattr()`, `NXUpreparedata()`, and `status`.

Here is the call graph for this function:

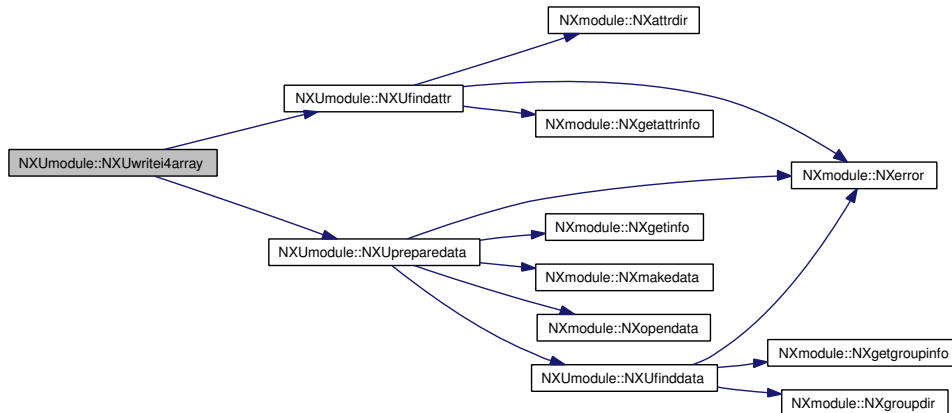


#### 5.88.1.43 INTEGER NXUmodule::NXUwritei4array (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *data\_name*, IN- TEGER(kind=NXi4),dimension(:),intent(in) *data*, CHARACTER(len=\*),intent(in),optional *units*, IN- TEGER,dimension(:),intent(in),optional *data\_start*, INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 201 of file `NXUmodule.f90`.

References `data_name`, `file_id`, `NXmodule::NX_EOD`, `NXmodule::NX_INT32`, `NXmodule::NX_OK`, `NXUfindattr()`, `NXUpreparedata()`, and `status`.

Here is the call graph for this function:

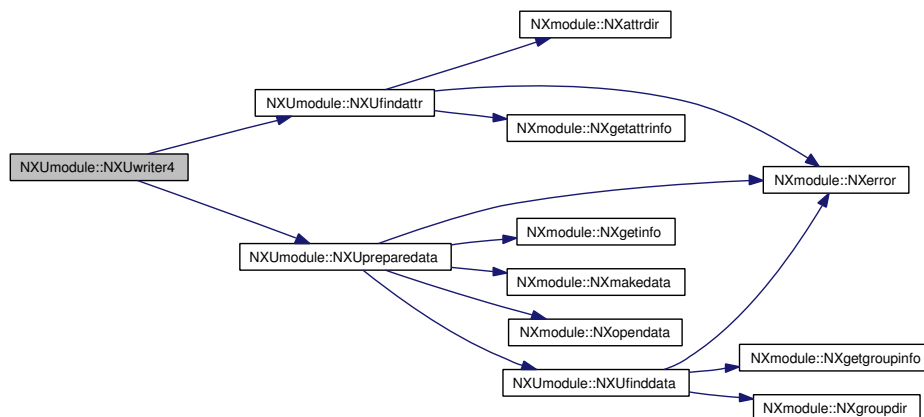


**5.88.1.44** INTEGER NXUmodule::NXUwriter4 (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *data\_name*, REAL(kind=NXr4),intent(in) *data*, CHARACTER(len=\*),intent(in),optional *units*)

Definition at line 142 of file NXUmodule.f90.

References `data_name`, `file_id`, `NXmodule::NX_EOD`, `NXmodule::NX_FLOAT32`, `NXmodule::NX_OK`, `NXUfindattr()`, `NXUpreparedata()`, and `status`.

Here is the call graph for this function:

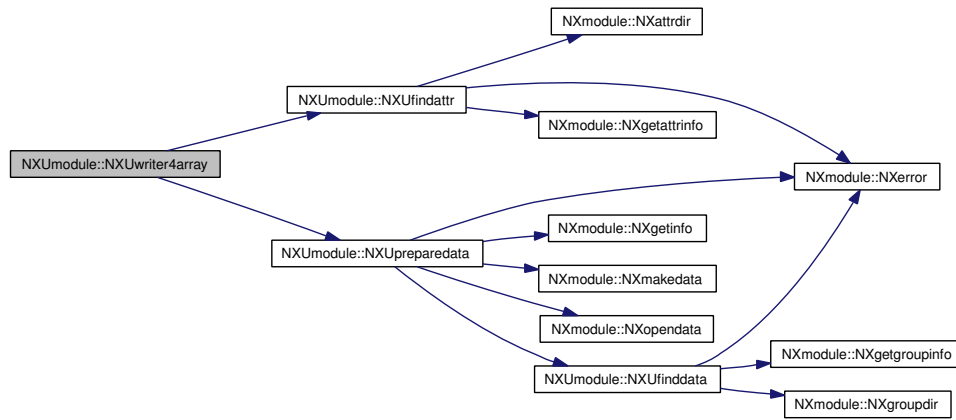


**5.88.1.45** INTEGER NXUmodule::NXUwriter4array (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *data\_name*, REAL(kind=NXr4),dimension(:),intent(in) *data*, CHARACTER(len=\*),intent(in),optional *units*, INTEGER,dimension(:),intent(in),optional *data\_start*, INTEGER,dimension(:),intent(in),optional *data\_size*)

Definition at line 226 of file NXUmodule.f90.

References `data_name`, `file_id`, `NXmodule::NX_EOD`, `NXmodule::NX_FLOAT32`, `NXmodule::NX_OK`, `NXUfindattr()`, `NXUpreparedata()`, and `status`.

Here is the call graph for this function:

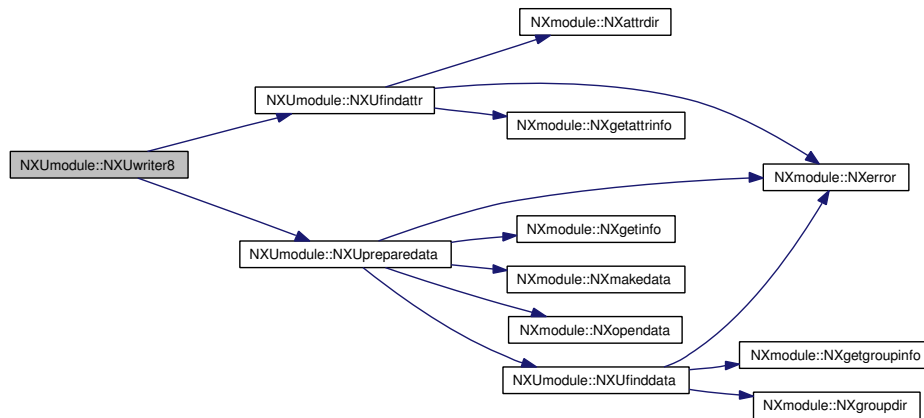


5.88.1.46 **INTEGER** NXUmodule::NXUwriter8 (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *data\_name*, REAL(kind=NXr8),intent(in) *data*, CHARACTER(len=\*),intent(in),optional *units*)

Definition at line 161 of file NXUmodule.f90.

References *data\_name*, *file\_id*, NXmodule::NX\_EOD, NXmodule::NX\_FLOAT64, NXmodule::NX\_OK, NXUfindattr(), NXUpreparedata(), and status.

Here is the call graph for this function:



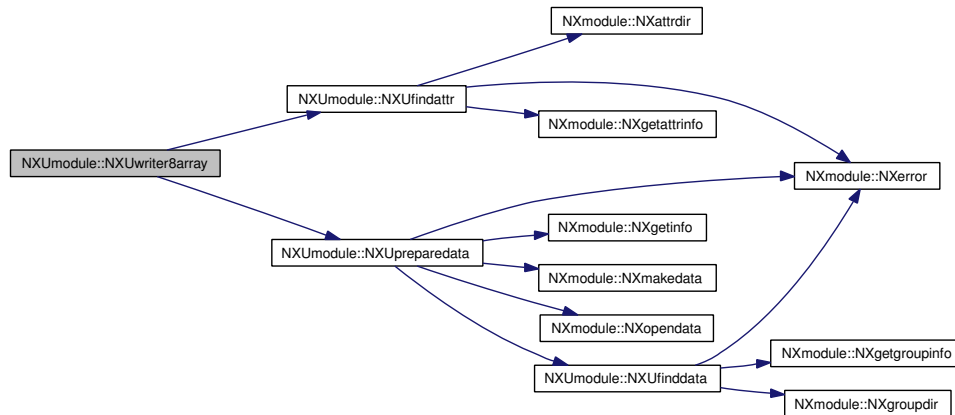
5.88.1.47 **INTEGER** NXUmodule::NXUwriter8array (TYPE(NXhandle),intent(inout) *file\_id*, CHARACTER(len=\*),intent(in) *data\_name*, REAL(kind=NXr8),dimension(:),intent(in) *data*, CHARACTER(len=\*),intent(in),optional *units*, **INTEGER**,dimension(:),intent(in),optional *data\_start*, **INTEGER**,dimension(:),intent(in),optional *data\_size*)

Definition at line 252 of file NXUmodule.f90.



References `data_name`, `file_id`, `NXmodule::NX_EOD`, `NXmodule::NX_FLOAT64`, `NXmodule::NX_OK`, `NXUfindattr()`, `NXUpreparedata()`, and `status`.

Here is the call graph for this function:



## 5.88.2 Variable Documentation

### 5.88.2.1 INTEGER NXUmodule::data\_dimensions

Definition at line 1547 of file `NXUmodule.f90`.

Referenced by `NXmodule::NXgetinfo()`, `NXmodule::NXmakedata()`, `NXUfindaxis()`, `NXUfindsignal()`, and `NXUpreparedata()`.

### 5.88.2.2 CHARACTER(len=\*) NXUmodule::data\_name

Definition at line 1545 of file `NXUmodule.f90`.

Referenced by `NXmodule::NXmakedata()`, `NXmodule::NXopendata()`, `NXUfindaxis()`, `NXUfinddata()`, `NXUfindsignal()`, `NXUpreparedata()`, `NXUread1Dcarray()`, `NXUread2Di4array()`, `NXUread2Dr4array()`, `NXUread2Dr8array()`, `NXUread3Di4array()`, `NXUread3Dr4array()`, `NXUread3Dr8array()`, `NXUreadchar()`, `NXUreadi4()`, `NXUreadi4array()`, `NXUreadr4()`, `NXUreadr4array()`, `NXUreadr8()`, `NXUreadr8array()`, `NXUwrite1Dcarray()`, `NXUwrite2Di4array()`, `NXUwrite2Dr4array()`, `NXUwrite2Dr8array()`, `NXUwrite3Di4array()`, `NXUwrite3Dr4array()`, `NXUwrite3Dr8array()`, `NXUwrite4Dr8array()`, `NXUwritechar()`, `NXUwritei4()`, `NXUwritei4array()`, `NXUwriter4()`, `NXUwriter4array()`, `NXUwriter8()`, and `NXUwriter8array()`.

### 5.88.2.3 INTEGER NXUmodule::data\_rank

Definition at line 1546 of file `NXUmodule.f90`.

Referenced by `NXmodule::NXgetinfo()`, `NXmodule::NXmakedata()`, `NXUfindaxis()`, `NXUfindsignal()`, and `NXUpreparedata()`.

### 5.88.2.4 INTEGER NXUmodule::data\_type

Definition at line 1546 of file `NXUmodule.f90`.

**5.88.2.5 TYPE(NXhandle) NXUmodule::file\_id**

Definition at line 1544 of file NXUmodule.f90.

Referenced by IXMfileio::IXBfileCloseGroup(), IXMfileio::IXBfileMakeGroup(), IXMfileio::IXBfileOpenGroup(), IXMfileio::IXBfileReadChar(), IXMfileio::IXBfileReadInteger(), IXMfileio::IXBfileReadLogical(), IXMfileio::IXBfileReadReal(), IXMfileio::IXBfileWriteChar(), IXMfileio::IXBfileWriteInteger(), IXMfileio::IXBfileWriteLogical(), IXMfileio::IXBfileWriteReal(), IXMfileio::IXBfindGroup(), IXMfileio::IXFfile\_close(), IXMfileio::IXFfile\_open(), IXMfileio::IXFfile\_read\_fileio(), IXMfileio::IXFfile\_write\_fileio(), IXMoperation::IXFoperation\_run\_fileio(), NXmodule::NXattrdir(), NXmodule::NXclose(), NXmodule::NXclosedata(), NXmodule::NXclosegroup(), NXmodule::NXcompress(), NXmodule::NXflush(), NXmodule::NXgetattrinfo(), NXmodule::NXgetchar(), NXmodule::NXgetcharattr(), NXmodule::NXgetdataID(), NXmodule::NXgetgroupID(), NXmodule::NXgetgroupinfo(), NXmodule::NXgeti1(), NXmodule::NXgeti1attr(), NXmodule::NXgeti1slab(), NXmodule::NXgeti2(), NXmodule::NXgeti2attr(), NXmodule::NXgeti2slab(), NXmodule::NXgeti4(), NXmodule::NXgeti4attr(), NXmodule::NXgeti4slab(), NXmodule::NXgetinfo(), NXmodule::NXgetnextattr(), NXmodule::NXgetnextentry(), NXmodule::NXgetr4(), NXmodule::NXgetr4attr(), NXmodule::NXgetr4slab(), NXmodule::NXgetr8(), NXmodule::NXgetr8attr(), NXmodule::NXgetr8slab(), NXmodule::NXgroupdir(), NXmodule::NXinitattrdir(), NXmodule::NXinitgroupdir(), NXmodule::NXmakedata(), NXmodule::NXmakegroup(), NXmodule::NXmakelink(), NXmodule::NXopen(), NXmodule::NXopendata(), NXmodule::NXopengroup(), NXmodule::NXputchar(), NXmodule::NXputcharattr(), NXmodule::NXputi1(), NXmodule::NXputi1attr(), NXmodule::NXputi1slab(), NXmodule::NXputi2(), NXmodule::NXputi2attr(), NXmodule::NXputi2slab(), NXmodule::NXputi4(), NXmodule::NXputi4attr(), NXmodule::NXputi4slab(), NXmodule::NXputr4(), NXmodule::NXputr4attr(), NXmodule::NXputr4slab(), NXmodule::NXputr8(), NXmodule::NXputr8attr(), NXmodule::NXputr8slab(), NXmodule::NXsameID(), NXUfindattr(), NXUfindaxis(), NXUfindclass(), NXUfinddata(), NXUfindgroup(), NXUfindlink(), NXUfindsignal(), NXUpreparedata(), NXUread1Dcarray(), NXUread2Di4array(), NXUread2Dr4array(), NXUread2Dr8array(), NXUread3Di4array(), NXUread3Dr4array(), NXUread3Dr8array(), NXUreadchar(), NXUreadi4(), NXUreadi4array(), NXUreadr4(), NXUreadr4array(), NXUreadr8(), NXUreadr8array(), NXUresumelink(), NXUsearchgroup(), NXUwrite1Dcarray(), NXUwrite2Di4array(), NXUwrite2Dr4array(), NXUwrite2Dr8array(), NXUwrite3Di4array(), NXUwrite3Dr4array(), NXUwrite3Dr8array(), NXUwrite4Dr8array(), NXUwritechar(), NXUwriteglobals(), NXUwritegroup(), NXUwritei4(), NXUwritei4array(), NXUwriter4(), NXUwriter4array(), NXUwriter8(), and NXUwriter8array().

**5.88.2.6 INTEGER NXUmodule::group\_level**

Definition at line 42 of file NXUmodule.f90.

Referenced by NXUfindlink(), NXUresumelink(), and NXUsearchgroup().

**5.88.2.7 INTEGER NXUmodule::NXcompress\_size = 1000**

Definition at line 41 of file NXUmodule.f90.

Referenced by NXUpreparedata(), and NXUsetcompress().

**5.88.2.8 INTEGER NXUmodule::NXcompress\_type = NX\_COMP\_NONE**

Definition at line 40 of file NXUmodule.f90.

Referenced by NXUpreparedata(), and NXUsetcompress().

**5.88.2.9 INTEGER NXUmodule::NXdims**

Definition at line 43 of file NXUmodule.f90.

Referenced by NXmodule::NXgetchar(), NXmodule::NXgeti1(), NXmodule::NXgeti1slab(), NXmodule::NXgeti2(), NXmodule::NXgeti2slab(), NXmodule::NXgeti4(), NXmodule::NXgeti4slab(), NXmodule::NXgetr4(), NXmodule::NXgetr4slab(), NXmodule::NXgetr8(), NXmodule::NXgetr8slab(), NXmodule::NXputi1slab(), NXmodule::NXputi2slab(), NXmodule::NXputi4slab(), NXmodule::NXputr4slab(), and NXmodule::NXputr8slab().

**5.88.2.10 INTEGER NXUmodule::NXrank**

Definition at line 43 of file NXUmodule.f90.

Referenced by NXmodule::NXgetchar(), NXmodule::NXgeti1(), NXmodule::NXgeti1slab(), NXmodule::NXgeti2(), NXmodule::NXgeti2slab(), NXmodule::NXgeti4(), NXmodule::NXgeti4slab(), NXmodule::NXgetr4(), NXmodule::NXgetr4slab(), NXmodule::NXgetr8(), NXmodule::NXgetr8slab(), NXmodule::NXputi1slab(), NXmodule::NXputi2slab(), NXmodule::NXputi4slab(), NXmodule::NXputr4slab(), and NXmodule::NXputr8slab().

**5.88.2.11 INTEGER NXUmodule::NXsize**

Definition at line 43 of file NXUmodule.f90.

Referenced by NXmodule::NXattrdir(), NXmodule::NXgetchar(), NXmodule::NXgeti1(), NXmodule::NXgeti1slab(), NXmodule::NXgeti2(), NXmodule::NXgeti2slab(), NXmodule::NXgeti4(), NXmodule::NXgeti4slab(), NXmodule::NXgetr4(), NXmodule::NXgetr4slab(), NXmodule::NXgetr8(), and NXmodule::NXgetr8slab().

**5.88.2.12 INTEGER NXUmodule::NXtype**

Definition at line 43 of file NXUmodule.f90.

Referenced by NXmodule::NXattrdir(), NXmodule::NXgetchar(), NXmodule::NXgeti1(), NXmodule::NXgeti1slab(), NXmodule::NXgeti2(), NXmodule::NXgeti2slab(), NXmodule::NXgeti4(), NXmodule::NXgeti4slab(), NXmodule::NXgetr4(), NXmodule::NXgetr4slab(), NXmodule::NXgetr8(), NXmodule::NXgetr8slab(), NXmodule::NXgroupdir(), NXmodule::NXputi1slab(), NXmodule::NXputi2slab(), NXmodule::NXputi4slab(), NXmodule::NXputr4slab(), and NXmodule::NXputr8slab().

**5.88.2.13 INTEGER NXUmodule::status**

Definition at line 1548 of file NXUmodule.f90.

Referenced by IXMstatus::add\_local\_status(), IXMstatus::add\_source\_status(), IXMstatus::check\_error\_status(), IXMstatus::check\_local\_status(), IXMstatus::check\_warning\_status(), IXMstatus::clear\_local\_status(), IXMinstrument::finduseddetectors(), IXMinstrument::findusedspectra(), IXMmoments\_utils::get\_moments(), IXMtools::homer\_message(),

IXMfileio::IXBfileCloseGroup(), IXMfileio::IXBfileMakeGroup(), IXMfileio::IXBfileOpenGroup(),  
 IXMfileio::IXBfileReadChar(), IXMfileio::IXBfileReadInteger(), IXMfileio::IXBfileReadLogical(),  
 IXMfileio::IXBfileReadReal(), IXMfileio::IXBfileWriteChar(), IXMfileio::IXBfileWriteInteger(),  
 IXMfileio::IXBfileWriteLogical(), IXMfileio::IXBfileWriteReal(), IXMfileio::IXBfindGroup(),  
 IXMgroups::IXFadd\_groups(), IXMhistory::IXFadditem\_history(), IXMshape::IXFarea\_ -  
 vertices\_box(), IXMshape::IXFarea\_vertices\_cylinder(), IXMgeometry::IXFarea\_ -  
 vertices\_geometry(), IXMshape::IXFarea\_vertices\_holcyl(), IXMshape::IXFarea\_ -  
 vertices\_point(), IXMshape::IXFarea\_vertices\_polygon(), IXMshape::IXFarea\_ -  
 vertices\_sphere(), IXMrunfile::IXFbackground\_runfile(), IXMrunfile::IXFcharge\_ -  
 norm\_runfile(), IXMshape::IXFcheck\_box(), IXMshape::IXFcheck\_cylinder(),  
 IXMgeometry::IXFcheck\_geometry(), IXMhistory::IXFcheck\_history(), IXMshape::IXFcheck\_ -  
 holcyl(), IXMinstrument::IXFcheck\_instrument(), IXMlattice::IXFcheck\_lattice(),  
 IXMmap::IXFcheck\_map(), IXMmoderator::IXFcheck\_moderator(), IXMmoments::IXFcheck\_ -  
 moments(), IXMorientation::IXFcheck\_orientation(), IXMpeaks::IXFcheck\_peaks(),  
 IXMshape::IXFcheck\_point(), IXMshape::IXFcheck\_polygon(), IXMrunfile::IXFcheck\_runfile(),  
 IXMsample::IXFcheck\_sample(), IXMshape::IXFcheck\_shape(), IXMsource::IXFcheck\_source(),  
 IXMspectra::IXFcheck\_spectra(), IXMshape::IXFcheck\_sphere(), IXMsw\_bridge::IXFcheck\_ -  
 sw\_bridge(), IXMtestclass::IXFcheck\_testclass(), IXMtranslation::IXFcheck\_translation(),  
 IXMuser::IXFcheck\_user(), IXMworkspace::IXFcheck\_workspace(), IXMws\_bridge::IXFcheck\_ -  
 ws\_bridge(), IXMrunfile::IXFcompare\_runfile(), IXMgeometry::IXFcreate\_attributes\_ -  
 geometry(), IXMunits::IXFcreate\_code\_units(), IXMunits::IXFcreate\_full\_units(),  
 IXMgeometry::IXFcreate\_geometry(), IXMgroup::IXFcreate\_group(), IXMgroups::IXFcreate\_ -  
 groups(), IXMhistory::IXFcreate\_history(), IXMinput\_source::IXFcreate\_input\_ -  
 source(), IXMinstrument::IXFcreate\_instrument(), IXMlattice::IXFcreate\_lattice(),  
 IXMmap::IXFcreate\_map(), IXMmask::IXFcreate\_mask(), IXMmoderator::IXFcreate\_ -  
 moderator(), IXMmoments::IXFcreate\_moments(), IXMoptions::IXFcreate\_ -  
 options(), IXMorientation::IXFcreate\_orientation(), IXMpeaks::IXFcreate\_peaks(),  
 IXMrunfile::IXFcreate\_runfile(), IXMsample::IXFcreate\_sample(), IXMshape::IXFcreate\_ -  
 shape(), IXMsource::IXFcreate\_source(), IXMtestclass::IXFcreate\_special\_ -  
 testclass(), IXMspectra::IXFcreate\_spectra(), IXMsw\_bridge::IXFcreate\_sw\_ -  
 bridge(), IXMtestclass::IXFcreate\_testclass(), IXMtranslation::IXFcreate\_translation(),  
 IXMunits::IXFcreate\_units(), IXMuser::IXFcreate\_user(), IXMworkspace::IXFcreate\_ -  
 workspace(), IXMws\_bridge::IXFcreate\_ws\_bridge(), IXMderivative::IXFderiv\_ -  
 1\_1d(), IXMderivative::IXFderiv\_2\_1d(), IXMgeometry::IXFdestroy\_geometry(),  
 IXMinstrument::IXFdestroy\_instrument(), IXMlattice::IXFdestroy\_lattice(),  
 IXMmap::IXFdestroy\_map(), IXMmask::IXFdestroy\_mask(), IXMmoderator::IXFdestroy\_ -  
 moderator(), IXMmoments::IXFdestroy\_moments(), IXMorientation::IXFdestroy\_ -  
 orientation(), IXMpeaks::IXFdestroy\_peaks(), IXMrunfile::IXFdestroy\_runfile(),  
 IXMsample::IXFdestroy\_sample(), IXMsource::IXFdestroy\_source(), IXMspectra::IXFdestroy\_ -  
 spectra(), IXMsw\_bridge::IXFdestroy\_sw\_bridge(), IXMtestclass::IXFdestroy\_ -  
 testclass(), IXMtranslation::IXFdestroy\_translation(), IXMunits::IXFdestroy\_ -  
 units(), IXMuser::IXFdestroy\_user(), IXMworkspace::IXFdestroy\_workspace(),  
 IXMws\_bridge::IXFdestroy\_ws\_bridge(), IXMoperation::IXFdisplay\_data\_source(),  
 IXMoperation::IXFdisplay\_fileio(), IXMoperation::IXFdisplay\_history(), IXMrunfile::IXFeffic\_ -  
 norm\_runfile(), IXMinstrument::IXFfe\_info\_instrument(), IXMfileio::IXFfile\_close(),  
 IXMfileio::IXFfile\_open(), IXMhistory::IXFfile\_read\_history(), IXMhistory::IXFfile\_write\_ -  
 history(), IXMmap::IXFfilerread\_map(), IXMmask::IXFfilerread\_mask(), IXMmap::IXFget\_ -  
 alloc\_map(), IXMmask::IXFget\_alloc\_mask(), IXMmoderator::IXFget\_alloc\_ -  
 moderator(), IXMpeaks::IXFget\_alloc\_peaks(), IXMspectra::IXFget\_alloc\_spectra(),  
 IXMsw\_bridge::IXFget\_alloc\_sw\_bridge(), IXMtestclass::IXFget\_alloc\_testclass(),  
 IXMworkspace::IXFget\_alloc\_workspace(), IXMws\_bridge::IXFget\_alloc\_ws\_bridge(),  
 IXMisis\_raw\_file::IXFget\_char(), IXMisis\_raw\_file::IXFget\_data\_i1(), IXMisis\_raw\_ -  
 file::IXFget\_data\_i2(), IXMisis\_raw\_file::IXFget\_dp(), IXMisis\_raw\_file::IXFget\_dp1(),  
 IXMisis\_raw\_file::IXFget\_dp2(), IXMgeometry::IXFget\_geometry(), IXMgroup::IXFget\_ -

group(), IXMgroups::IXFget\_groups(), IXMhistory::IXFget\_history(), IXMinput\_
 source::IXFget\_input\_source(), IXMinstrument::IXFget\_instrument(), IXMisis\_raw\_
 file::IXFget\_int(), IXMisis\_raw\_file::IXFget\_int1(), IXMisis\_raw\_file::IXFget\_int2(),
 IXMlattice::IXFget\_lattice(), IXMmap::IXFget\_map(), IXMmask::IXFget\_mask(),
 IXMmoderator::IXFget\_moderator(), IXMmoments::IXFget\_moments(), IXMoptions::IXFget\_
 options(), IXMorientation::IXFget\_orientation(), IXMpeaks::IXFget\_peaks(), IXMisis\_raw\_
 file::IXFget\_real(), IXMisis\_raw\_file::IXFget\_real1(), IXMisis\_raw\_file::IXFget\_real2(),
 IXMrunfile::IXFget\_runfile(), IXMsample::IXFget\_sample(), IXMshape::IXFget\_shape(),
 IXMsource::IXFget\_source(), IXMspectra::IXFget\_spectra(), IXMisis\_raw\_file::IXFget\_
 spectrum\_array\_d1(), IXMisis\_raw\_file::IXFget\_spectrum\_array\_d2(), IXMisis\_
 raw\_file::IXFget\_spectrum\_d1(), IXMisis\_raw\_file::IXFget\_spectrum\_d2(), IXMsw\_
 bridge::IXFget\_sw\_bridge(), IXMtestclass::IXFget\_testclass(), IXMtranslation::IXFget\_
 translation(), IXMunits::IXFget\_units(), IXMuser::IXFget\_user(), IXMworkspace::IXFget\_
 workspace(), IXMws\_bridge::IXFget\_ws\_bridge(), IXMrunfile::IXFgetdetdata\_
 runfile(), IXMspectra::IXFgetdets\_spectra(), IXMrunfile::IXFgetei\_runfile(),
 IXMrunfile::IXFgeteival\_runfile(), IXMrunfile::IXFgetmonddata\_runfile(), IXMstatus::IXFinit\_
 status(), IXMintegrate::IXFintegrate\_1d\_hist(), IXMintegrate::IXFintegrate\_1d\_
 points(), IXMintegrate::IXFintegrate\_2d\_hist(), IXMlibcore::IXFlibrary\_finish(),
 IXMmemory::IXFmemory\_cleanup(), IXMrunfile::IXFmon\_norm\_runfile(), IXMisis\_raw\_
 file::IXFopen\_raw(), IXMisis\_raw\_file::IXFopen\_raw\_handle(), IXMoperation::IXFoperation\_
 run\_array\_data\_source(), IXMoperation::IXFoperation\_run\_array\_fileio(),
 IXMoperation::IXFoperation\_run\_array\_history(), IXMoperation::IXFoperation\_run\_
 data\_source(), IXMoperation::IXFoperation\_run\_fileio(), IXMgeometry::IXFoperation\_run\_
 geometry(), IXMgroup::IXFoperation\_run\_group(), IXMgroups::IXFoperation\_run\_groups(),
 IXMoperation::IXFoperation\_run\_history(), IXMinput\_source::IXFoperation\_run\_input\_
 source(), IXMinstrument::IXFoperation\_run\_instrument(), IXMisis\_raw\_file::IXFoperation\_
 run\_ISIS\_Raw\_File(), IXMlattice::IXFoperation\_run\_lattice(), IXMmap::IXFoperation\_
 run\_map(), IXMmask::IXFoperation\_run\_mask(), IXMmoderator::IXFoperation\_run\_
 moderator(), IXMmoments::IXFoperation\_run\_moments(), IXMoptions::IXFoperation\_
 run\_options(), IXMorientation::IXFoperation\_run\_orientation(), IXMpeaks::IXFoperation\_
 run\_peaks(), IXMrunfile::IXFoperation\_run\_runfile(), IXMsample::IXFoperation\_run\_
 sample(), IXMshape::IXFoperation\_run\_shape(), IXMsource::IXFoperation\_run\_source(),
 IXMspectra::IXFoperation\_run\_spectra(), IXMsw\_bridge::IXFoperation\_run\_sw\_
 bridge(), IXMtestclass::IXFoperation\_run\_testclass(), IXMtranslation::IXFoperation\_
 run\_translation(), IXMunits::IXFoperation\_run\_units(), IXMuser::IXFoperation\_run\_
 user(), IXMworkspace::IXFoperation\_run\_workspace(), IXMws\_bridge::IXFoperation\_
 run\_ws\_bridge(), IXMoperation::IXFoperationArrayInit(), IXMoperation::IXFoperation\_
 Start(), IXMrunfile::IXFpeak\_norm\_runfile(), IXMtestclass::IXFplus\_testclass(),
 IXMmaths\_geometry::IXFpolygon\_moments(), IXMrunfile::IXFpopulate\_det\_
 runfile(), IXMinstrument::IXFpopulate\_instrument(), IXMmap::IXFpopulate\_
 map\_dso(), IXMmask::IXFpopulate\_mask\_dso(), IXMrunfile::IXFpopulate\_mon\_
 runfile(), IXMrunfile::IXFpopulate\_runfile(), IXMsw\_bridge::IXFpopulate\_sw\_bridge(),
 IXMworkspace::IXFpopulate\_workspace(), IXMoptions::IXFpresent(), IXMgroups::IXFprint\_
 groups(), IXMmaths\_projection::IXFproj\_projection(), IXMgeometry::IXFprojarea\_vertices\_
 geometry(), IXMshape::IXFprojarea\_vertices\_shape(), IXMmap::IXFrawfile\_popdet\_map(),
 IXMmap::IXFrawfile\_popmon\_map(), IXMmap::IXFread\_dso\_map(), IXMmask::IXFread\_
 dso\_mask(), IXMmap::IXFread\_map(), IXMmask::IXFread\_mask(), IXMmask::IXFreadgen\_
 dso\_mask(), IXMrebin::IXFrebin\_1d\_hist(), IXMrebin::IXFrebin\_1d\_hist\_get\_arr(),
 IXMrebin::IXFrebin\_points(), IXMrunfile::IXFrebin\_runfile(), IXMrebin::IXFrebin\_
 X\_2d\_hist(), IXMrebin::IXFrebinY\_2d\_hist(), IXMrebunch::IXFrebunchHist(),
 IXMrebunch::IXFrebunchHistX(), IXMrebunch::IXFrebunchHistY(), IXMrebunch::IXFrebunch\_
 Points(), IXMrebunch::IXFrebunchPointsX(), IXMrebunch::IXFrebunchPointsY(),
 IXMrebunch::IXFrebunchXY(), IXMregroup::IXFregroup\_1d\_hist(), IXMregroup::IXFregroup\_
 X\_2d\_hist(), IXMregroup::IXFregroupY\_2d\_hist(), IXMrunfile::IXFremap\_runfile(),

IXMorientation::IXFset\_attributes\_orientation(), IXMgeometry::IXFset\_geometry(),  
 IXMgroup::IXFset\_group(), IXMhistory::IXFset\_history(), IXMinput\_source::IXFset\_  
 input\_source(), IXMinstrument::IXFset\_instrument(), IXMlattice::IXFset\_lattice(),  
 IXMmap::IXFset\_map(), IXMmask::IXFset\_mask(), IXMmoderator::IXFset\_moderator(),  
 IXMmoments::IXFset\_moments(), IXMoptions::IXFset\_options(), IXMorientation::IXFset\_  
 orientation(), IXMpeaks::IXFset\_peaks(), IXMorientation::IXFset\_rotvec\_orientation(),  
 IXMrunfile::IXFset\_runfile(), IXMsample::IXFset\_sample(), IXMshape::IXFset\_shape(),  
 IXMsource::IXFset\_source(), IXMspectra::IXFset\_spectra(), IXMsw\_bridge::IXFset\_  
 sw\_bridge(), IXMtestclass::IXFset\_testclass(), IXMtranslation::IXFset\_translation(),  
 IXMunits::IXFset\_units(), IXMuser::IXFset\_user(), IXMworkspace::IXFset\_workspace(),  
 IXMws\_bridge::IXFset\_ws\_bridge(), IXMisis\_raw\_file::IXFsize\_raw\_i(), IXMisis\_raw\_  
 file::IXFsize\_raw\_i\_array(), IXMshape::IXFsolid\_angle\_polygon(), IXMrunfile::IXFsolid\_  
 runfile(), IXMunits\_utils::IXFunits\_convert(), IXMunits\_utils::IXFunits\_get\_len\_  
 arr(), IXMinstrument::IXFunitsinfo\_instrument(), IXMmap::IXFverify\_period\_map(),  
 IXMshape::IXFvolume\_polygon(), IXMio::IXFwrite\_line(), IXMio::IXFwrite\_line\_indent(),  
 IXIwrite\_line(), IXMrunfile::loaddetmap(), IXMrunfile::loadheaderinfo\_isis(), IXMrun\_  
 file::loadmask(), IXMrunfile::loadmonmap(), IXMrunfile::loaddrawfile(), IXMstatus::make\_  
 traceback\_status(), IXMgroups::member\_list\_byname(), IXMfileio::nexus\_error(), NXmod-  
 ule::NXattrdir(), NXmodule::NXclose(), NXmodule::NXclosedata(), NXmodule::NXclosegroup(),  
 NXmodule::NXcompress(), NXmodule::NXflush(), NXmodule::NXgetattrinfo(), NX-  
 module::NXgetchar(), NXmodule::NXgetcharattr(), NXmodule::NXgetdataID(),  
 NXmodule::NXgetgroupID(), NXmodule::NXgetgroupinfo(), NXmodule::NXgeti1(), NX-  
 module::NXgeti1attr(), NXmodule::NXgeti1slab(), NXmodule::NXgeti2(), NXmodule-  
 ::NXgeti2attr(), NXmodule::NXgeti2slab(), NXmodule::NXgeti4(), NXmodule::NXgeti4attr(),  
 NXmodule::NXgeti4slab(), NXmodule::NXgetinfo(), NXmodule::NXgetnextattr(), NX-  
 module::NXgetnextentry(), NXmodule::NXgetr4(), NXmodule::NXgetr4attr(), NX-  
 module::NXgetr4slab(), NXmodule::NXgetr8(), NXmodule::NXgetr8attr(), NXmod-  
 ule::NXgetr8slab(), NXmodule::NXgroupdir(), NXmodule::NXinitattrdir(), NXmod-  
 ule::NXinitgroupdir(), NXmodule::NXmakedata(), NXmodule::NXmakegroup(), NX-  
 module::NXmakelink(), NXmodule::NXopen(), NXmodule::NXopendata(), NXmod-  
 ule::NXopengroup(), NXmodule::NXputchar(), NXmodule::NXputcharattr(), NX-  
 module::NXputi1(), NXmodule::NXputi1attr(), NXmodule::NXputi1slab(), NXmod-  
 ule::NXputi2(), NXmodule::NXputi2attr(), NXmodule::NXputi2slab(), NXmodule::NXputi4(),  
 NXmodule::NXputi4attr(), NXmodule::NXputi4slab(), NXmodule::NXputr4(), NX-  
 module::NXputr4attr(), NXmodule::NXputr4slab(), NXmodule::NXputr8(), NXmod-  
 ule::NXputr8attr(), NXmodule::NXputr8slab(), NXmodule::NXsameID(), NXUfindattr(),  
 NXUfindaxis(), NXUfindclass(), NXUfinddata(), NXUfindgroup(), NXUfindlink(), NXUfind-  
 signal(), NXUpreparedata(), NXUread1Dcarray(), NXUread2Di4array(), NXUread2Dr4array(),  
 NXUread2Dr8array(), NXUread3Di4array(), NXUread3Dr4array(), NXUread3Dr8array(), NX-  
 Uread4Di4array(), NXUread4Dr4array(), NXUread4Dr8array(), NXUreadchar(), NXUreadi4(),  
 NXUreadi4array(), NXUreadr4(), NXUreadr4array(), NXUreadr8(), NXUreadr8array(),  
 NXUresumelink(), NXUsearchgroup(), NXUsetcompress(), NXUwrite1Dcarray(), NX-  
 Uwrite2Di4array(), NXUwrite2Dr4array(), NXUwrite2Dr8array(), NXUwrite3Di4array(),  
 NXUwrite3Dr4array(), NXUwrite3Dr8array(), NXUwrite4Di4array(), NXUwrite4Dr4array(),  
 NXUwrite4Dr8array(), NXUwritechar(), NXUwriteglobals(), NXUwritegroup(), NXUwritei4(),  
 NXUwritei4array(), NXUwriter4(), NXUwriter4array(), NXUwriter8(), NXUwriter8array(),  
 IXMgroups::parent\_list\_byid(), IXMgroups::parent\_list\_byname(), IXMspectra::populate\_  
 list\_dso\_isis(), IXMtools::remark(), IXMgroups::remove\_byid(), IXMgroups::remove\_byname(),  
 IXMstatus::remove\_source\_status(), IXMstatus::report\_local\_status(), IXMoperation::run-  
 OperationCharacter(), IXMoperation::runOperationInteger(), IXMoperation::runOperation-  
 Logical(), IXMoperation::runOperationReal(), IXMinput\_source::size\_i(), IXMinput\_  
 source::size\_i\_array(), IXMrunfile::units\_rebinXdesc\_runfile(), IXMrunfile::units\_rebin-  
 Xref\_runfile(), IXMrunfile::units\_runfile(), IXMwrapped\_var::unwrap\_char(), IXMwrapped\_  
 var::unwrap\_dp(), IXMwrapped\_var::unwrap\_i(), IXMwrapped\_var::unwrap\_logval(), and

---

IXMwrapped\_var::unwrap\_object().





# Chapter 6

## LIBISIS Class Documentation

### 6.1 IXMwrapped\_var::base\_object Struct Reference

#### Public Attributes

- `real(dp) d`

#### 6.1.1 Detailed Description

Definition at line 25 of file IXMwrappedvar.f90.

#### 6.1.2 Member Data Documentation

##### 6.1.2.1 `real(dp) IXMwrapped_var::base_object::d`

Definition at line 26 of file IXMwrappedvar.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMwrappedvar.f90`

## 6.2 NXUmodule::data\_type Struct Reference

### 6.2.1 Detailed Description

Definition at line 1556 of file NXUmodule.f90.

The documentation for this struct was generated from the following file:

- libclasses/NXUmodule.f90

## 6.3 ieee\_double Struct Reference

### Public Attributes

- unsigned int **mantissa1**: 20
- unsigned int **exp**: 11
- unsigned int **sign**: 1
- unsigned int **mantissa2**: 32

### 6.3.1 Detailed Description

Definition at line 227 of file endian\_convert.c.

### 6.3.2 Member Data Documentation

#### 6.3.2.1 unsigned int ieee\_double::mantissa1

Definition at line 228 of file endian\_convert.c.

#### 6.3.2.2 unsigned int ieee\_double::exp

Definition at line 229 of file endian\_convert.c.

#### 6.3.2.3 unsigned int ieee\_double::sign

Definition at line 230 of file endian\_convert.c.

#### 6.3.2.4 unsigned int ieee\_double::mantissa2

Definition at line 231 of file endian\_convert.c.

The documentation for this struct was generated from the following file:

- libclasses/**endian\_convert.c**

## 6.4 iee\_ single Struct Reference

### Public Attributes

- unsigned int **mantissa**: 23
- unsigned int **exp**: 8
- unsigned int **sign**: 1

#### 6.4.1 Detailed Description

Definition at line 172 of file `endian_convert.c`.

#### 6.4.2 Member Data Documentation

##### 6.4.2.1 unsigned int `iee_ single::mantissa`

Definition at line 173 of file `endian_convert.c`.

##### 6.4.2.2 unsigned int `iee_ single::exp`

Definition at line 174 of file `endian_convert.c`.

##### 6.4.2.3 unsigned int `iee_ single::sign`

Definition at line 175 of file `endian_convert.c`.

The documentation for this struct was generated from the following file:

- `libclasses/endian_convert.c`

## 6.5 IXMstatus::interface Interface Reference

### 6.5.1 Detailed Description

Definition at line 75 of file IXMstatus.f90.

The documentation for this interface was generated from the following file:

- libcore/**IXMstatus.f90**

## 6.6 IXMstatus::interface Interface Reference

### 6.6.1 Detailed Description

Definition at line 75 of file IXMstatus.f90.

The documentation for this interface was generated from the following file:

- libcore/**IXMstatus.f90**

## 6.7 IXMdataset\_1d::interface Interface Reference

### 6.7.1 Detailed Description

Definition at line 204 of file IXMdataset\_1d.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMdataset\_1d.f90

## 6.8 IXMfileio::IXBfileRead Interface Reference

### Public Member Functions

- subroutine `IXBfileReadChar` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileReadReal` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileReadInteger` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileReadLogical` (`fio`, `name`, `value`, `status`)
- `IXBfileReaddp1`
- `IXBfileReaddp2`
- `IXBfileReaddp3`
- `IXBfileReaddp4`
- `IXBfileReadi4b1`
- `IXBfileReadi4b2`
- `IXBfileReadi4b3`
- `IXBfileReadi4b4`
- `IXBfileReadc1`

### 6.8.1 Detailed Description

Definition at line 19 of file `IXMfileio.f90`.

### 6.8.2 Member Function Documentation

**6.8.2.1** subroutine `IXMfileio::IXBfileRead::IXBfileReadChar` (`type(IXTfileio) fio`, `character(len=*) name`, `character(len=*) value`, `type(IXTstatus) status`)

Definition at line 192 of file `IXMfileio.f90`.

**6.8.2.2** subroutine `IXMfileio::IXBfileRead::IXBfileReadReal` (`type(IXTfileio) fio`, `character(len=*) name`, `real(dp) value`, `type(IXTstatus) status`)

Definition at line 252 of file `IXMfileio.f90`.

**6.8.2.3** subroutine `IXMfileio::IXBfileRead::IXBfileReadInteger` (`type(IXTfileio) fio`, `character(len=*) name`, `integer(i4b) value`, `type(IXTstatus) status`)

Definition at line 222 of file `IXMfileio.f90`.

**6.8.2.4** subroutine `IXMfileio::IXBfileRead::IXBfileReadLogical` (`type(IXTfileio) fio`, `character(len=*) name`, `logical value`, `type(IXTstatus) status`)

Definition at line 286 of file `IXMfileio.f90`.



6.8.2.5 IXMfileio::IXBfileRead::IXBfileReaddp1 ()

6.8.2.6 IXMfileio::IXBfileRead::IXBfileReaddp2 ()

6.8.2.7 IXMfileio::IXBfileRead::IXBfileReaddp3 ()

6.8.2.8 IXMfileio::IXBfileRead::IXBfileReaddp4 ()

6.8.2.9 IXMfileio::IXBfileRead::IXBfileReadi4b1 ()

6.8.2.10 IXMfileio::IXBfileRead::IXBfileReadi4b2 ()

6.8.2.11 IXMfileio::IXBfileRead::IXBfileReadi4b3 ()

6.8.2.12 IXMfileio::IXBfileRead::IXBfileReadi4b4 ()

6.8.2.13 IXMfileio::IXBfileRead::IXBfileReadc1 ()

The documentation for this interface was generated from the following files:

- libclasses/IXMfileio.f90

## 6.9 IXMfileio::IXBfileReadAlloc Interface Reference

### Public Member Functions

- `IXBfileReadAllocdp1`
- `IXBfileReadAllocdp2`
- `IXBfileReadAllocdp3`
- `IXBfileReadAllocdp4`
- `IXBfileReadAlloci4b1`
- `IXBfileReadAlloci4b2`
- `IXBfileReadAlloci4b3`
- `IXBfileReadAlloci4b4`
- `IXBfileReadAllocc1`

### 6.9.1 Detailed Description

Definition at line 25 of file `IXMfileio.f90`.

### 6.9.2 Member Function Documentation

**6.9.2.1** `IXMfileio::IXBfileReadAlloc::IXBfileReadAllocdp1` ()

**6.9.2.2** `IXMfileio::IXBfileReadAlloc::IXBfileReadAllocdp2` ()

**6.9.2.3** `IXMfileio::IXBfileReadAlloc::IXBfileReadAllocdp3` ()

**6.9.2.4** `IXMfileio::IXBfileReadAlloc::IXBfileReadAllocdp4` ()

**6.9.2.5** `IXMfileio::IXBfileReadAlloc::IXBfileReadAlloci4b1` ()

**6.9.2.6** `IXMfileio::IXBfileReadAlloc::IXBfileReadAlloci4b2` ()

**6.9.2.7** `IXMfileio::IXBfileReadAlloc::IXBfileReadAlloci4b3` ()

**6.9.2.8** `IXMfileio::IXBfileReadAlloc::IXBfileReadAlloci4b4` ()

**6.9.2.9** `IXMfileio::IXBfileReadAlloc::IXBfileReadAllocc1` ()

The documentation for this interface was generated from the following files:

- `libclasses/IXMfileio.f90`

## 6.10 IXMfileio::IXBfileReadPtr Interface Reference

### Public Member Functions

- `IXBfileReadPtrdp1`
- `IXBfileReadPtrdp2`
- `IXBfileReadPtrdp3`
- `IXBfileReadPtrdp4`
- `IXBfileReadPtri4b1`
- `IXBfileReadPtri4b2`
- `IXBfileReadPtri4b3`
- `IXBfileReadPtri4b4`

### 6.10.1 Detailed Description

Definition at line 31 of file `IXMfileio.f90`.

### 6.10.2 Member Function Documentation

**6.10.2.1** `IXMfileio::IXBfileReadPtr::IXBfileReadPtrdp1` ()

**6.10.2.2** `IXMfileio::IXBfileReadPtr::IXBfileReadPtrdp2` ()

**6.10.2.3** `IXMfileio::IXBfileReadPtr::IXBfileReadPtrdp3` ()

**6.10.2.4** `IXMfileio::IXBfileReadPtr::IXBfileReadPtrdp4` ()

**6.10.2.5** `IXMfileio::IXBfileReadPtr::IXBfileReadPtri4b1` ()

**6.10.2.6** `IXMfileio::IXBfileReadPtr::IXBfileReadPtri4b2` ()

**6.10.2.7** `IXMfileio::IXBfileReadPtr::IXBfileReadPtri4b3` ()

**6.10.2.8** `IXMfileio::IXBfileReadPtr::IXBfileReadPtri4b4` ()

The documentation for this interface was generated from the following files:

- `libclasses/IXMfileio.f90`

## 6.11 IXMfileio::IXBfileWrite Interface Reference

### Public Member Functions

- subroutine `IXBfileWriteChar` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileWriteReal` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileWriteInteger` (`fio`, `name`, `value`, `status`)
- subroutine `IXBfileWriteLogical` (`fio`, `name`, `value`, `status`)
- `IXBfileWritedp1`
- `IXBfileWritedp2`
- `IXBfileWritedp3`
- `IXBfileWritedp4`
- `IXBfileWritei4b1`
- `IXBfileWritei4b2`
- `IXBfileWritei4b3`
- `IXBfileWritei4b4`
- `IXBfileWritec1`

#### 6.11.1 Detailed Description

Definition at line 13 of file `IXMfileio.f90`.

#### 6.11.2 Member Function Documentation

- 6.11.2.1** subroutine `IXMfileio::IXBfileWrite::IXBfileWriteChar` (`type(IXTfileio)` *fio*, `character(len=*)` *name*, `character(len=*)` *value*, `type(IXTstatus)` *status*)

Definition at line 177 of file `IXMfileio.f90`.

- 6.11.2.2** subroutine `IXMfileio::IXBfileWrite::IXBfileWriteReal` (`type(IXTfileio)` *fio*, `character(len=*)` *name*, `real(dp)` *value*, `type(IXTstatus)` *status*)

Definition at line 237 of file `IXMfileio.f90`.

- 6.11.2.3** subroutine `IXMfileio::IXBfileWrite::IXBfileWriteInteger` (`type(IXTfileio)` *fio*, `character(len=*)` *name*, `integer(i4b)` *value*, `type(IXTstatus)` *status*)

Definition at line 207 of file `IXMfileio.f90`.

- 6.11.2.4** subroutine `IXMfileio::IXBfileWrite::IXBfileWriteLogical` (`type(IXTfileio)` *fio*, `character(len=*)` *name*, `logical` *value*, `type(IXTstatus)` *status*)

Definition at line 267 of file `IXMfileio.f90`.

- 6.11.2.5 IXMfileio::IXBfileWrite::IXBfileWritedp1 ()
- 6.11.2.6 IXMfileio::IXBfileWrite::IXBfileWritedp2 ()
- 6.11.2.7 IXMfileio::IXBfileWrite::IXBfileWritedp3 ()
- 6.11.2.8 IXMfileio::IXBfileWrite::IXBfileWritedp4 ()
- 6.11.2.9 IXMfileio::IXBfileWrite::IXBfileWritei4b1 ()
- 6.11.2.10 IXMfileio::IXBfileWrite::IXBfileWritei4b2 ()
- 6.11.2.11 IXMfileio::IXBfileWrite::IXBfileWritei4b3 ()
- 6.11.2.12 IXMfileio::IXBfileWrite::IXBfileWritei4b4 ()
- 6.11.2.13 IXMfileio::IXBfileWrite::IXBfileWritec1 ()

The documentation for this interface was generated from the following files:

- libclasses/IXMfileio.f90

## 6.12 IXMoperation\_interfaces::IXBgetFromBinding Interface Reference

### 6.12.1 Detailed Description

Definition at line 84 of file IXMoperation\_interfaces.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMoperation\_interfaces.f90

## 6.13 IXMoperation\_interfaces::IXBgetFromBindingAlloc Interface Reference

### 6.13.1 Detailed Description

Definition at line 177 of file IXMoperation\_interfaces.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMoperation\_interfaces.f90

## 6.14 IXMstatus::IXFadd\_status Interface Reference

### Public Member Functions

- subroutine `add_local_status` (`status`, `facility`, `severity`, `code`, `message`)
- subroutine `add_global_status` (`facility`, `severity`, `code`, `message`)

#### 6.14.1 Detailed Description

Definition at line 93 of file `IXMstatus.f90`.

#### 6.14.2 Member Function Documentation

**6.14.2.1** subroutine `IXMstatus::IXFadd_status::add_local_status`  
(`type(IXTStatus),intent(inout) status`, `integer,intent(in) facility`, `integer,intent(in) severity`, `integer,intent(in) code`, `character(len=*),intent(in) message`)

Definition at line 246 of file `IXMstatus.f90`.

**6.14.2.2** subroutine `IXMstatus::IXFadd_status::add_global_status`  
(`integer,intent(in) facility`, `integer,intent(in) severity`, `integer,intent(in) code`, `character(len=*),intent(in) message`)

Definition at line 274 of file `IXMstatus.f90`.

The documentation for this interface was generated from the following file:

- `libcore/IXMstatus.f90`



## 6.15 IXMarraymanips::IXFarrayCheck Interface Reference

### Public Member Functions

- `arrayCheck_1D`
- `arrayCheck_2D`
- `arrayCheck_3D`

#### 6.15.1 Detailed Description

Definition at line 58 of file `IXMarraymanips.f90`.

#### 6.15.2 Member Function Documentation

**6.15.2.1** `IXMarraymanips::IXFarrayCheck::arrayCheck_1D ()`

**6.15.2.2** `IXMarraymanips::IXFarrayCheck::arrayCheck_2D ()`

**6.15.2.3** `IXMarraymanips::IXFarrayCheck::arrayCheck_3D ()`

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`

## 6.16 IXMarraymanips::IXFarrayCos Interface Reference

### Public Member Functions

- arrayCos\_1D
- arrayCos\_2D
- arrayCos\_3D

#### 6.16.1 Detailed Description

Definition at line 226 of file IXMarraymanips.f90.

#### 6.16.2 Member Function Documentation

**6.16.2.1** IXMarraymanips::IXFarrayCos::arrayCos\_1D ()

**6.16.2.2** IXMarraymanips::IXFarrayCos::arrayCos\_2D ()

**6.16.2.3** IXMarraymanips::IXFarrayCos::arrayCos\_3D ()

The documentation for this interface was generated from the following files:

- libcore/IXMarraymanips.f90

## 6.17 IXMarraymanips::IXFarrayCosh Interface Reference

### Public Member Functions

- `arrayCosh_1D`
- `arrayCosh_2D`
- `arrayCosh_3D`

#### 6.17.1 Detailed Description

Definition at line 268 of file `IXMarraymanips.f90`.

#### 6.17.2 Member Function Documentation

**6.17.2.1** `IXMarraymanips::IXFarrayCosh::arrayCosh_1D ()`

**6.17.2.2** `IXMarraymanips::IXFarrayCosh::arrayCosh_2D ()`

**6.17.2.3** `IXMarraymanips::IXFarrayCosh::arrayCosh_3D ()`

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`

## 6.18 IXMarraymanips::IXFarrayDivide Interface Reference

### Public Member Functions

- arrayDivideDD\_1D
- arrayDivideDS\_1D
- arrayDivideSD\_1D
- arrayDivideDD\_2D
- arrayDivideDS\_2D
- arrayDivideSD\_2D
- arrayDivideDD\_3D
- arrayDivideDS\_3D
- arrayDivideSD\_3D

### 6.18.1 Detailed Description

Definition at line 146 of file IXMarraymanips.f90.

### 6.18.2 Member Function Documentation

6.18.2.1 IXMarraymanips::IXFarrayDivide::arrayDivideDD\_1D ()

6.18.2.2 IXMarraymanips::IXFarrayDivide::arrayDivideDS\_1D ()

6.18.2.3 IXMarraymanips::IXFarrayDivide::arrayDivideSD\_1D ()

6.18.2.4 IXMarraymanips::IXFarrayDivide::arrayDivideDD\_2D ()

6.18.2.5 IXMarraymanips::IXFarrayDivide::arrayDivideDS\_2D ()

6.18.2.6 IXMarraymanips::IXFarrayDivide::arrayDivideSD\_2D ()

6.18.2.7 IXMarraymanips::IXFarrayDivide::arrayDivideDD\_3D ()

6.18.2.8 IXMarraymanips::IXFarrayDivide::arrayDivideDS\_3D ()

6.18.2.9 IXMarraymanips::IXFarrayDivide::arrayDivideSD\_3D ()

The documentation for this interface was generated from the following files:

- libcore/IXMarraymanips.f90

## 6.19 IXMarraymanips::IXFarrayDivideAD Interface Reference

### Public Member Functions

- arrayDivideAD\_1D
- arrayDivideAD\_2D
- arrayDivideAD\_3D

#### 6.19.1 Detailed Description

Definition at line 366 of file IXMarraymanips.f90.

#### 6.19.2 Member Function Documentation

**6.19.2.1** IXMarraymanips::IXFarrayDivideAD::arrayDivideAD\_1D ()

**6.19.2.2** IXMarraymanips::IXFarrayDivideAD::arrayDivideAD\_2D ()

**6.19.2.3** IXMarraymanips::IXFarrayDivideAD::arrayDivideAD\_3D ()

The documentation for this interface was generated from the following files:

- libcore/IXMarraymanips.f90

## 6.20 IXMarraymanips::IXFarrayDivideDA Interface Reference

### Public Member Functions

- `arrayDivideDA_1D`
- `arrayDivideDA_2D`
- `arrayDivideDA_3D`

### 6.20.1 Detailed Description

Definition at line 363 of file `IXMarraymanips.f90`.

### 6.20.2 Member Function Documentation

**6.20.2.1** `IXMarraymanips::IXFarrayDivideDA::arrayDivideDA_1D ()`

**6.20.2.2** `IXMarraymanips::IXFarrayDivideDA::arrayDivideDA_2D ()`

**6.20.2.3** `IXMarraymanips::IXFarrayDivideDA::arrayDivideDA_3D ()`

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`

## 6.21 IXMarraymanips::IXFarrayExp Interface Reference

### Public Member Functions

- `arrayExp_1D`
- `arrayExp_2D`
- `arrayExp_3D`

#### 6.21.1 Detailed Description

Definition at line 184 of file `IXMarraymanips.f90`.

#### 6.21.2 Member Function Documentation

**6.21.2.1** `IXMarraymanips::IXFarrayExp::arrayExp_1D` ()

**6.21.2.2** `IXMarraymanips::IXFarrayExp::arrayExp_2D` ()

**6.21.2.3** `IXMarraymanips::IXFarrayExp::arrayExp_3D` ()

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`

## 6.22 IXMarraymanips::IXFarrayLog Interface Reference

### Public Member Functions

- `arrayLog_1D`
- `arrayLog_2D`
- `arrayLog_3D`

#### 6.22.1 Detailed Description

Definition at line 198 of file `IXMarraymanips.f90`.

#### 6.22.2 Member Function Documentation

**6.22.2.1** `IXMarraymanips::IXFarrayLog::arrayLog_1D ()`

**6.22.2.2** `IXMarraymanips::IXFarrayLog::arrayLog_2D ()`

**6.22.2.3** `IXMarraymanips::IXFarrayLog::arrayLog_3D ()`

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`



## 6.23 IXMarraymanips::IXFarrayMinus Interface Reference

### Public Member Functions

- arrayMinusDD\_1D
- arrayMinusDS\_1D
- arrayMinusSD\_1D
- arrayMinusDD\_2D
- arrayMinusDS\_2D
- arrayMinusSD\_2D
- arrayMinusDD\_3D
- arrayMinusDS\_3D
- arrayMinusSD\_3D

### 6.23.1 Detailed Description

Definition at line 124 of file IXMarraymanips.f90.

### 6.23.2 Member Function Documentation

**6.23.2.1** IXMarraymanips::IXFarrayMinus::arrayMinusDD\_1D ()

**6.23.2.2** IXMarraymanips::IXFarrayMinus::arrayMinusDS\_1D ()

**6.23.2.3** IXMarraymanips::IXFarrayMinus::arrayMinusSD\_1D ()

**6.23.2.4** IXMarraymanips::IXFarrayMinus::arrayMinusDD\_2D ()

**6.23.2.5** IXMarraymanips::IXFarrayMinus::arrayMinusDS\_2D ()

**6.23.2.6** IXMarraymanips::IXFarrayMinus::arrayMinusSD\_2D ()

**6.23.2.7** IXMarraymanips::IXFarrayMinus::arrayMinusDD\_3D ()

**6.23.2.8** IXMarraymanips::IXFarrayMinus::arrayMinusDS\_3D ()

**6.23.2.9** IXMarraymanips::IXFarrayMinus::arrayMinusSD\_3D ()

The documentation for this interface was generated from the following files:

- libcore/IXMarraymanips.f90

## 6.24 IXMarraymanips::IXFarrayMinusAD Interface Reference

### Public Member Functions

- `arrayMinusAD_1D`
- `arrayMinusAD_2D`
- `arrayMinusAD_3D`

### 6.24.1 Detailed Description

Definition at line 345 of file `IXMarraymanips.f90`.

### 6.24.2 Member Function Documentation

**6.24.2.1** `IXMarraymanips::IXFarrayMinusAD::arrayMinusAD_1D` ()

**6.24.2.2** `IXMarraymanips::IXFarrayMinusAD::arrayMinusAD_2D` ()

**6.24.2.3** `IXMarraymanips::IXFarrayMinusAD::arrayMinusAD_3D` ()

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`

## 6.25 IXMarraymanips::IXFarrayMinusDA Interface Reference

### Public Member Functions

- `arrayMinusDA_1D`
- `arrayMinusDA_2D`
- `arrayMinusDA_3D`

### 6.25.1 Detailed Description

Definition at line 342 of file `IXMarraymanips.f90`.

### 6.25.2 Member Function Documentation

**6.25.2.1** `IXMarraymanips::IXFarrayMinusDA::arrayMinusDA_1D` ()

**6.25.2.2** `IXMarraymanips::IXFarrayMinusDA::arrayMinusDA_2D` ()

**6.25.2.3** `IXMarraymanips::IXFarrayMinusDA::arrayMinusDA_3D` ()

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`

## 6.26 IXMarraymanips::IXFarrayPlus Interface Reference

### Public Member Functions

- arrayPlusDD\_1D
- arrayPlusDS\_1D
- arrayPlusSD\_1D
- arrayPlusDD\_2D
- arrayPlusDS\_2D
- arrayPlusSD\_2D
- arrayPlusDD\_3D
- arrayPlusDS\_3D
- arrayPlusSD\_3D

### 6.26.1 Detailed Description

Definition at line 80 of file IXMarraymanips.f90.

### 6.26.2 Member Function Documentation

**6.26.2.1** IXMarraymanips::IXFarrayPlus::arrayPlusDD\_1D ()

**6.26.2.2** IXMarraymanips::IXFarrayPlus::arrayPlusDS\_1D ()

**6.26.2.3** IXMarraymanips::IXFarrayPlus::arrayPlusSD\_1D ()

**6.26.2.4** IXMarraymanips::IXFarrayPlus::arrayPlusDD\_2D ()

**6.26.2.5** IXMarraymanips::IXFarrayPlus::arrayPlusDS\_2D ()

**6.26.2.6** IXMarraymanips::IXFarrayPlus::arrayPlusSD\_2D ()

**6.26.2.7** IXMarraymanips::IXFarrayPlus::arrayPlusDD\_3D ()

**6.26.2.8** IXMarraymanips::IXFarrayPlus::arrayPlusDS\_3D ()

**6.26.2.9** IXMarraymanips::IXFarrayPlus::arrayPlusSD\_3D ()

The documentation for this interface was generated from the following files:

- libcore/IXMarraymanips.f90

## 6.27 IXMarraymanips::IXFarrayPlusAD Interface Reference

### Public Member Functions

- `arrayPlusAD_1D`
- `arrayPlusAD_2D`
- `arrayPlusAD_3D`

### 6.27.1 Detailed Description

Definition at line 303 of file IXMarraymanips.f90.

### 6.27.2 Member Function Documentation

**6.27.2.1** `IXMarraymanips::IXFarrayPlusAD::arrayPlusAD_1D ()`

**6.27.2.2** `IXMarraymanips::IXFarrayPlusAD::arrayPlusAD_2D ()`

**6.27.2.3** `IXMarraymanips::IXFarrayPlusAD::arrayPlusAD_3D ()`

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`

## 6.28 IXMarraymanips::IXFarrayPlusDA Interface Reference

### Public Member Functions

- arrayPlusDA\_1D
- arrayPlusDA\_2D
- arrayPlusDA\_3D

### 6.28.1 Detailed Description

Definition at line 300 of file IXMarraymanips.f90.

### 6.28.2 Member Function Documentation

**6.28.2.1** IXMarraymanips::IXFarrayPlusDA::arrayPlusDA\_1D ()

**6.28.2.2** IXMarraymanips::IXFarrayPlusDA::arrayPlusDA\_2D ()

**6.28.2.3** IXMarraymanips::IXFarrayPlusDA::arrayPlusDA\_3D ()

The documentation for this interface was generated from the following files:

- libcore/IXMarraymanips.f90

## 6.29 IXMarraymanips::IXFarrayPower Interface Reference

### Public Member Functions

- arrayPowerDD\_1D
- arrayPowerDS\_1D
- arrayPowerSD\_1D
- arrayPowerDD\_2D
- arrayPowerDS\_2D
- arrayPowerSD\_2D
- arrayPowerDD\_3D
- arrayPowerDS\_3D
- arrayPowerSD\_3D

### 6.29.1 Detailed Description

Definition at line 168 of file IXMarraymanips.f90.

### 6.29.2 Member Function Documentation

6.29.2.1 IXMarraymanips::IXFarrayPower::arrayPowerDD\_1D ()

6.29.2.2 IXMarraymanips::IXFarrayPower::arrayPowerDS\_1D ()

6.29.2.3 IXMarraymanips::IXFarrayPower::arrayPowerSD\_1D ()

6.29.2.4 IXMarraymanips::IXFarrayPower::arrayPowerDD\_2D ()

6.29.2.5 IXMarraymanips::IXFarrayPower::arrayPowerDS\_2D ()

6.29.2.6 IXMarraymanips::IXFarrayPower::arrayPowerSD\_2D ()

6.29.2.7 IXMarraymanips::IXFarrayPower::arrayPowerDD\_3D ()

6.29.2.8 IXMarraymanips::IXFarrayPower::arrayPowerDS\_3D ()

6.29.2.9 IXMarraymanips::IXFarrayPower::arrayPowerSD\_3D ()

The documentation for this interface was generated from the following files:

- libcore/IXMarraymanips.f90

## 6.30 IXMarraymanips::IXFarraySin Interface Reference

### Public Member Functions

- `arraySin_1D`
- `arraySin_2D`
- `arraySin_3D`

#### 6.30.1 Detailed Description

Definition at line 212 of file `IXMarraymanips.f90`.

#### 6.30.2 Member Function Documentation

**6.30.2.1** `IXMarraymanips::IXFarraySin::arraySin_1D ()`

**6.30.2.2** `IXMarraymanips::IXFarraySin::arraySin_2D ()`

**6.30.2.3** `IXMarraymanips::IXFarraySin::arraySin_3D ()`

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`



## 6.31 IXMarraymanips::IXFarraySinh Interface Reference

### Public Member Functions

- `arraySinh_1D`
- `arraySinh_2D`
- `arraySinh_3D`

#### 6.31.1 Detailed Description

Definition at line 254 of file `IXMarraymanips.f90`.

#### 6.31.2 Member Function Documentation

**6.31.2.1** `IXMarraymanips::IXFarraySinh::arraySinh_1D ()`

**6.31.2.2** `IXMarraymanips::IXFarraySinh::arraySinh_2D ()`

**6.31.2.3** `IXMarraymanips::IXFarraySinh::arraySinh_3D ()`

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`

## 6.32 IXMarraymanips::IXFarrayTan Interface Reference

### Public Member Functions

- `arrayTan_1D`
- `arrayTan_2D`
- `arrayTan_3D`

#### 6.32.1 Detailed Description

Definition at line 240 of file `IXMarraymanips.f90`.

#### 6.32.2 Member Function Documentation

**6.32.2.1** `IXMarraymanips::IXFarrayTan::arrayTan_1D ()`

**6.32.2.2** `IXMarraymanips::IXFarrayTan::arrayTan_2D ()`

**6.32.2.3** `IXMarraymanips::IXFarrayTan::arrayTan_3D ()`

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`

## 6.33 IXMarraymanips::IXFarrayTanh Interface Reference

### Public Member Functions

- `arrayTanh_1D`
- `arrayTanh_2D`
- `arrayTanh_3D`

#### 6.33.1 Detailed Description

Definition at line 281 of file IXMarraymanips.f90.

#### 6.33.2 Member Function Documentation

**6.33.2.1** IXMarraymanips::IXFarrayTanh::arrayTanh\_1D ()

**6.33.2.2** IXMarraymanips::IXFarrayTanh::arrayTanh\_2D ()

**6.33.2.3** IXMarraymanips::IXFarrayTanh::arrayTanh\_3D ()

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`

## 6.34 IXMarraymanips::IXFarrayTimes Interface Reference

### Public Member Functions

- arrayTimesDD\_1D
- arrayTimesDS\_1D
- arrayTimesSD\_1D
- arrayTimesDD\_2D
- arrayTimesDS\_2D
- arrayTimesSD\_2D
- arrayTimesDD\_3D
- arrayTimesDS\_3D
- arrayTimesSD\_3D

### 6.34.1 Detailed Description

Definition at line 102 of file IXMarraymanips.f90.

### 6.34.2 Member Function Documentation

**6.34.2.1** IXMarraymanips::IXFarrayTimes::arrayTimesDD\_1D ()

**6.34.2.2** IXMarraymanips::IXFarrayTimes::arrayTimesDS\_1D ()

**6.34.2.3** IXMarraymanips::IXFarrayTimes::arrayTimesSD\_1D ()

**6.34.2.4** IXMarraymanips::IXFarrayTimes::arrayTimesDD\_2D ()

**6.34.2.5** IXMarraymanips::IXFarrayTimes::arrayTimesDS\_2D ()

**6.34.2.6** IXMarraymanips::IXFarrayTimes::arrayTimesSD\_2D ()

**6.34.2.7** IXMarraymanips::IXFarrayTimes::arrayTimesDD\_3D ()

**6.34.2.8** IXMarraymanips::IXFarrayTimes::arrayTimesDS\_3D ()

**6.34.2.9** IXMarraymanips::IXFarrayTimes::arrayTimesSD\_3D ()

The documentation for this interface was generated from the following files:

- libcore/IXMarraymanips.f90

## 6.35 IXMarraymanips::IXFarrayTimesAD Interface Reference

### Public Member Functions

- `arrayTimesAD_1D`
- `arrayTimesAD_2D`
- `arrayTimesAD_3D`

### 6.35.1 Detailed Description

Definition at line 324 of file `IXMarraymanips.f90`.

### 6.35.2 Member Function Documentation

**6.35.2.1** `IXMarraymanips::IXFarrayTimesAD::arrayTimesAD_1D` ()

**6.35.2.2** `IXMarraymanips::IXFarrayTimesAD::arrayTimesAD_2D` ()

**6.35.2.3** `IXMarraymanips::IXFarrayTimesAD::arrayTimesAD_3D` ()

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`

## 6.36 IXMarraymanips::IXFarrayTimesDA Interface Reference

### Public Member Functions

- `arrayTimesDA_1D`
- `arrayTimesDA_2D`
- `arrayTimesDA_3D`

#### 6.36.1 Detailed Description

Definition at line 321 of file `IXMarraymanips.f90`.

#### 6.36.2 Member Function Documentation

**6.36.2.1** `IXMarraymanips::IXFarrayTimesDA::arrayTimesDA_1D ()`

**6.36.2.2** `IXMarraymanips::IXFarrayTimesDA::arrayTimesDA_2D ()`

**6.36.2.3** `IXMarraymanips::IXFarrayTimesDA::arrayTimesDA_3D ()`

The documentation for this interface was generated from the following files:

- `libcore/IXMarraymanips.f90`

## 6.37 IXMdata\_source::IXFcheck Interface Reference

### Public Member Functions

- subroutine `IXFcheck_data_source` (`arg`, `status`)
- subroutine `IXFcheck_array_data_source` (`w1`, `s`)

#### 6.37.1 Detailed Description

Definition at line 29 of file `IXMdata_source.f90`.

#### 6.37.2 Member Function Documentation

##### 6.37.2.1 subroutine `IXMdata_source::IXFcheck::IXFcheck_data_source` (`type(IXTdata_source)` `arg`, `type(IXTstatus)` `status`)

Definition at line 39 of file `IXMdata_source.f90`.

##### 6.37.2.2 subroutine `IXMdata_source::IXFcheck::IXFcheck_array_data_source` (`type(IXTdata_source)`,`dimension(:)` `w1`, `type(IXTstatus)` `s`)

Definition at line 60 of file `IXMdata_source.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdata_source.f90`

## 6.38 IXMhistory::IXFcheck Interface Reference

### Public Member Functions

- subroutine `IXFcheck_history` (`arg`, `status`)
- subroutine `IXFcheck_array_history` (`w1`, `s`)

#### 6.38.1 Detailed Description

Definition at line 28 of file `IXMhistory.f90`.

#### 6.38.2 Member Function Documentation

##### 6.38.2.1 subroutine `IXMhistory::IXFcheck::IXFcheck_history` (`type(IXThistory)` *arg*, `type(IXTstatus)` *status*)

Definition at line 38 of file `IXMhistory.f90`.

##### 6.38.2.2 subroutine `IXMhistory::IXFcheck::IXFcheck_array_history` (`type(IXThistory)`, `dimension(:)` *w1*, `type(IXTstatus)` *s*)

Definition at line 52 of file `IXMhistory.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMhistory.f90`



## 6.39 IXMoperation::IXFcheck Interface Reference

### Public Member Functions

- subroutine `IXFcheck_fileio` (`value`, `status`)
- subroutine `IXFcheck_array_fileio` (`w1`, `s`)

#### 6.39.1 Detailed Description

Definition at line 128 of file `IXMoperation.f90`.

#### 6.39.2 Member Function Documentation

##### 6.39.2.1 subroutine `IXMoperation::IXFcheck::IXFcheck_fileio` (`type(IXTfileio) value`, `type(IXTstatus) status`)

Definition at line 1096 of file `IXMoperation.f90`.

##### 6.39.2.2 subroutine `IXMoperation::IXFcheck::IXFcheck_array_fileio` (`type(IXTfileio),dimension(:) w1`, `type(IXTstatus) s`)

Definition at line 1124 of file `IXMoperation.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMoperation.f90`

## 6.40 IXMstatus::IXFcheck\_status Interface Reference

### Public Member Functions

- logical `check_local_status` (`status`, `status_type`, `default_source`)
- logical `check_global_status` (`status_type`)

#### 6.40.1 Detailed Description

Definition at line 97 of file IXMstatus.f90.

#### 6.40.2 Member Function Documentation

- 6.40.2.1** logical IXMstatus::IXFcheck\_status::check\_local\_status  
(`type(IXTstatus),intent(in) status`, `integer,intent(in) status_type`,  
`character(len=*),intent(in),optional default_source`)

Definition at line 321 of file IXMstatus.f90.

- 6.40.2.2** logical IXMstatus::IXFcheck\_status::check\_global\_status  
(`integer,intent(in) status_type`)

Definition at line 142 of file IXMstatus.f90.

The documentation for this interface was generated from the following file:

- `libcore/IXMstatus.f90`

## 6.41 IXMstatus::IXFclear\_status Interface Reference

### Public Member Functions

- subroutine `clear_local_status` (`status`, `report`)
- subroutine `clear_global_status` (`report`)

#### 6.41.1 Detailed Description

Definition at line 101 of file `IXMstatus.f90`.

#### 6.41.2 Member Function Documentation

**6.41.2.1** subroutine `IXMstatus::IXFclear_status::clear_local_status`  
(`type(IXTstatus)`,`intent(inout)` *status*, `logical`,`intent(in)`,`optional` *report*)

Definition at line 160 of file `IXMstatus.f90`.

**6.41.2.2** subroutine `IXMstatus::IXFclear_status::clear_global_status`  
(`logical`,`intent(in)`,`optional` *report*)

Definition at line 185 of file `IXMstatus.f90`.

The documentation for this interface was generated from the following file:

- `libcore/IXMstatus.f90`

## 6.42 IXMdatum\_array::IXFcos Interface Reference

### Public Member Functions

- `IXFcos_datum_array`

#### 6.42.1 Detailed Description

Definition at line 81 of file `IXMdatum_array.f90`.

#### 6.42.2 Member Function Documentation

##### 6.42.2.1 `IXMdatum_array::IXFcos::IXFcos_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.43 IXMdataset\_1d::IXFcos Interface Reference

### Public Member Functions

- `IXFcos_dataset_1d`

#### 6.43.1 Detailed Description

Definition at line 180 of file `IXMdataset_1d.f90`.

#### 6.43.2 Member Function Documentation

##### 6.43.2.1 `IXMdataset_1d::IXFcos::IXFcos_dataset_1d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.44 IXMmaths\_basis::IXFcos Interface Reference

### 6.44.1 Detailed Description

Definition at line 26 of file IXMmaths\_basis.f90.

The documentation for this interface was generated from the following file:

- libcore/IXMmaths\_basis.f90

## 6.45 IXMdataset\_2d::IXFcos Interface Reference

### Public Member Functions

- [IXFcos\\_dataset\\_2d](#)

#### 6.45.1 Detailed Description

Definition at line 256 of file IXMdataset\_2d.f90.

#### 6.45.2 Member Function Documentation

##### 6.45.2.1 IXMdataset\_2d::IXFcos::IXFcos\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.46 IXMdatum::IXFcos Interface Reference

### Public Member Functions

- `IXFcos_datum`

#### 6.46.1 Detailed Description

Definition at line 80 of file `IXMdatum.f90`.

#### 6.46.2 Member Function Documentation

##### 6.46.2.1 `IXMdatum::IXFcos::IXFcos_datum ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum.f90`



## 6.47 IXMdatum\_array::IXFcosh Interface Reference

### Public Member Functions

- `IXFcosh_datum_array`

#### 6.47.1 Detailed Description

Definition at line 93 of file `IXMdatum_array.f90`.

#### 6.47.2 Member Function Documentation

##### 6.47.2.1 `IXMdatum_array::IXFcosh::IXFcosh_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.48 IXMdataset\_1d::IXFcosh Interface Reference

### Public Member Functions

- [IXFcosh\\_dataset\\_1d](#)

### 6.48.1 Detailed Description

Definition at line 192 of file IXMdataset\_1d.f90.

### 6.48.2 Member Function Documentation

#### 6.48.2.1 IXMdataset\_1d::IXFcosh::IXFcosh\_dataset\_1d ()

The documentation for this interface was generated from the following files:

- [libclasses/IXMdataset\\_1d.f90](#)

## 6.49 IXMdataset\_2d::IXFcosh Interface Reference

### Public Member Functions

- `IXFcosh_dataset_2d`

#### 6.49.1 Detailed Description

Definition at line 268 of file `IXMdataset_2d.f90`.

#### 6.49.2 Member Function Documentation

##### 6.49.2.1 `IXMdataset_2d::IXFcosh::IXFcosh_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.50 IXMdatum::IXFcosh Interface Reference

### Public Member Functions

- `IXFcosh_datum`

#### 6.50.1 Detailed Description

Definition at line 92 of file `IXMdatum.f90`.

#### 6.50.2 Member Function Documentation

##### 6.50.2.1 `IXMdatum::IXFcosh::IXFcosh_datum ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum.f90`

## 6.51 IXMorientation::IXFcreate Interface Reference

### Public Member Functions

- subroutine `IXFcreate_class_orientation` (`self`, `orientation`)

#### 6.51.1 Detailed Description

Definition at line 72 of file `IXMorientation.f90`.

#### 6.51.2 Member Function Documentation

- 6.51.2.1** subroutine `IXMorientation::IXFcreate::IXFcreate_class_orientation`  
(`type(IXTOrientation)`,`intent(out) self`, `type(IXTOrientation)`,`intent(in)`  
`orientation`)

Definition at line 247 of file `IXMorientation.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMorientation.f90`

## 6.52 IXMtestclass::IXFcreate Interface Reference

### Public Member Functions

- subroutine `IXFcreate_special_testclass` (`arg`, `val_array`, `err_array`, `spectra`, `status`)

#### 6.52.1 Detailed Description

Definition at line 52 of file `IXMtestclass.f90`.

#### 6.52.2 Member Function Documentation

**6.52.2.1** subroutine `IXMtestclass::IXFcreate::IXFcreate_special_testclass`  
(`type(IXTtestclass) arg`, `real(dp),dimension(:),intent(in) val_array`,  
`real(dp),dimension(:),intent(in) err_array`, `type(IXTspectra),intent(in)`  
`spectra`, `type(IXTstatus) status`)

Definition at line 348 of file `IXMtestclass.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMtestclass.f90`

## 6.53 IXMmaths\_basis::IXFcross Interface Reference

### 6.53.1 Detailed Description

Definition at line 30 of file IXMmaths\_basis.f90.

The documentation for this interface was generated from the following file:

- libcore/IXMmaths\_basis.f90

## 6.54 IXMtranslation::IXFcross Interface Reference

### 6.54.1 Detailed Description

Definition at line 55 of file IXMtranslation.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMtranslation.f90



## 6.55 IXMoperation::IXFdisplay Interface Reference

### Public Member Functions

- subroutine IXFdisplay\_fileio (value, status)
- subroutine IXFdisplay\_array\_fileio (w1, s)
- subroutine IXFdisplay\_data\_source (value, status)
- subroutine IXFdisplay\_array\_data\_source (w1, s)
- subroutine IXFdisplay\_history (value, status)
- subroutine IXFdisplay\_array\_history (w1, s)

#### 6.55.1 Detailed Description

Definition at line 121 of file IXMoperation.f90.

#### 6.55.2 Member Function Documentation

**6.55.2.1** subroutine IXMoperation::IXFdisplay::IXFdisplay\_fileio (type(IXTfileio) *value*, type(IXTstatus) *status*)

Definition at line 1101 of file IXMoperation.f90.

**6.55.2.2** subroutine IXMoperation::IXFdisplay::IXFdisplay\_array\_fileio (type(IXTfileio),dimension(:) *w1*, type(IXTstatus) *s*)

Definition at line 1110 of file IXMoperation.f90.

**6.55.2.3** subroutine IXMoperation::IXFdisplay::IXFdisplay\_data\_source (type(IXTdata\_source) *value*, type(IXTstatus) *status*)

Definition at line 1042 of file IXMoperation.f90.

**6.55.2.4** subroutine IXMoperation::IXFdisplay::IXFdisplay\_array\_data\_source (type(IXTdata\_source),dimension(:) *w1*, type(IXTstatus) *s*)

Definition at line 1051 of file IXMoperation.f90.

**6.55.2.5** subroutine IXMoperation::IXFdisplay::IXFdisplay\_history (type(IXThistory) *value*, type(IXTstatus) *status*)

Definition at line 1164 of file IXMoperation.f90.

**6.55.2.6** subroutine IXMoperation::IXFdisplay::IXFdisplay\_array\_history (type(IXThistory),dimension(:) *w1*, type(IXTstatus) *s*)

Definition at line 1173 of file IXMoperation.f90.

The documentation for this interface was generated from the following file:

- `libclasses/IXMoperation.f90`

## 6.56 IXMdatum\_array::IXFdivide Interface Reference

### Public Member Functions

- `ts_Divide_datum_array`
- `tt_Divide_datum_array`
- `st_Divide_datum_array`

#### 6.56.1 Detailed Description

Definition at line 58 of file `IXMdatum_array.f90`.

#### 6.56.2 Member Function Documentation

**6.56.2.1** `IXMdatum_array::IXFdivide::ts_Divide_datum_array ()`

**6.56.2.2** `IXMdatum_array::IXFdivide::tt_Divide_datum_array ()`

**6.56.2.3** `IXMdatum_array::IXFdivide::st_Divide_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.57 IXMdataset\_1d::IXFdivide Interface Reference

### Public Member Functions

- `ta_divide_dataset_1d`
- `at_divide_dataset_1d`
- `ts_divide_dataset_1d`
- `tt_divide_dataset_1d`
- `st_divide_dataset_1d`

### 6.57.1 Detailed Description

Definition at line 143 of file `IXMdataset_1d.f90`.

### 6.57.2 Member Function Documentation

**6.57.2.1** `IXMdataset_1d::IXFdivide::ta_divide_dataset_1d ()`

**6.57.2.2** `IXMdataset_1d::IXFdivide::at_divide_dataset_1d ()`

**6.57.2.3** `IXMdataset_1d::IXFdivide::ts_divide_dataset_1d ()`

**6.57.2.4** `IXMdataset_1d::IXFdivide::tt_divide_dataset_1d ()`

**6.57.2.5** `IXMdataset_1d::IXFdivide::st_divide_dataset_1d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.58 IXMdataset\_2d::IXFdivide Interface Reference

### Public Member Functions

- `t_at_divide_dataset_2d`
- `at_t_divide_dataset_2d`
- `at_divide_dataset_2d`
- `ta_divide_dataset_2d`
- `ts_divide_dataset_2d`
- `tt_divide_dataset_2d`
- `st_divide_dataset_2d`

#### 6.58.1 Detailed Description

Definition at line 163 of file `IXMdataset_2d.f90`.

#### 6.58.2 Member Function Documentation

**6.58.2.1** `IXMdataset_2d::IXFdivide::t_at_divide_dataset_2d ()`

**6.58.2.2** `IXMdataset_2d::IXFdivide::at_t_divide_dataset_2d ()`

**6.58.2.3** `IXMdataset_2d::IXFdivide::at_divide_dataset_2d ()`

**6.58.2.4** `IXMdataset_2d::IXFdivide::ta_divide_dataset_2d ()`

**6.58.2.5** `IXMdataset_2d::IXFdivide::ts_divide_dataset_2d ()`

**6.58.2.6** `IXMdataset_2d::IXFdivide::tt_divide_dataset_2d ()`

**6.58.2.7** `IXMdataset_2d::IXFdivide::st_divide_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.59 IXMdatum::IXFdivide Interface Reference

### Public Member Functions

- subroutine `datumDivideWS` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumDivideWW` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumDivideSW` (`wres`, `arg1`, `arg2`, `status`)

### 6.59.1 Detailed Description

Definition at line 57 of file `IXMdatum.f90`.

### 6.59.2 Member Function Documentation

**6.59.2.1** subroutine `IXMdatum::IXFdivide::datumDivideWS` (`type(IXTdatum)`  
`wres`, `type(IXTdatum)` `arg1`, `real(dp)` `arg2`, `type(IXTstatus)` `status`)

Definition at line 320 of file `IXMdatum.f90`.

**6.59.2.2** subroutine `IXMdatum::IXFdivide::datumDivideWW` (`type(IXTdatum)`  
`wres`, `type(IXTdatum)` `arg1`, `type(IXTdatum)` `arg2`, `type(IXTstatus)`  
`status`)

Definition at line 293 of file `IXMdatum.f90`.

**6.59.2.3** subroutine `IXMdatum::IXFdivide::datumDivideSW` (`type(IXTdatum)`  
`wres`, `real(dp)` `arg1`, `type(IXTdatum)` `arg2`, `type(IXTstatus)` `status`)

Definition at line 309 of file `IXMdatum.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdatum.f90`

## 6.60 IXMdataset\_1d::IXFdivide\_dataset\_1d Interface Reference

### Public Member Functions

- `ta_divide_dataset_1d`
- `at_divide_dataset_1d`
- `ts_divide_dataset_1d`
- `tt_divide_dataset_1d`
- `st_divide_dataset_1d`

### 6.60.1 Detailed Description

Definition at line 139 of file IXMdataset\_1d.f90.

### 6.60.2 Member Function Documentation

**6.60.2.1** IXMdataset\_1d::IXFdivide\_dataset\_1d::ta\_divide\_dataset\_1d ()

**6.60.2.2** IXMdataset\_1d::IXFdivide\_dataset\_1d::at\_divide\_dataset\_1d ()

**6.60.2.3** IXMdataset\_1d::IXFdivide\_dataset\_1d::ts\_divide\_dataset\_1d ()

**6.60.2.4** IXMdataset\_1d::IXFdivide\_dataset\_1d::tt\_divide\_dataset\_1d ()

**6.60.2.5** IXMdataset\_1d::IXFdivide\_dataset\_1d::st\_divide\_dataset\_1d ()

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.61 IXMdataset\_2d::IXFdivide\_dataset\_2d Interface Reference

### Public Member Functions

- `t_at_divide_dataset_2d`
- `at_t_divide_dataset_2d`
- `at_divide_dataset_2d`
- `ta_divide_dataset_2d`
- `ts_divide_dataset_2d`
- `tt_divide_dataset_2d`
- `st_divide_dataset_2d`

#### 6.61.1 Detailed Description

Definition at line 158 of file `IXMdataset_2d.f90`.

#### 6.61.2 Member Function Documentation

**6.61.2.1** `IXMdataset_2d::IXFdivide_dataset_2d::t_at_divide_dataset_2d ()`

**6.61.2.2** `IXMdataset_2d::IXFdivide_dataset_2d::at_t_divide_dataset_2d ()`

**6.61.2.3** `IXMdataset_2d::IXFdivide_dataset_2d::at_divide_dataset_2d ()`

**6.61.2.4** `IXMdataset_2d::IXFdivide_dataset_2d::ta_divide_dataset_2d ()`

**6.61.2.5** `IXMdataset_2d::IXFdivide_dataset_2d::ts_divide_dataset_2d ()`

**6.61.2.6** `IXMdataset_2d::IXFdivide_dataset_2d::tt_divide_dataset_2d ()`

**6.61.2.7** `IXMdataset_2d::IXFdivide_dataset_2d::st_divide_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`



## 6.62 IXMdatum::IXFdivide\_Datum Interface Reference

### Public Member Functions

- subroutine `datumDivideWS` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumDivideWW` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumDivideSW` (`wres`, `arg1`, `arg2`, `status`)

### 6.62.1 Detailed Description

Definition at line 54 of file `IXMdatum.f90`.

### 6.62.2 Member Function Documentation

**6.62.2.1** subroutine `IXMdatum::IXFdivide_Datum::datumDivideWS`  
(`type(IXTdatum)` `wres`, `type(IXTdatum)` `arg1`, `real(dp)` `arg2`,  
`type(IXTstatus)` `status`)

Definition at line 320 of file `IXMdatum.f90`.

**6.62.2.2** subroutine `IXMdatum::IXFdivide_Datum::datumDivideWW`  
(`type(IXTdatum)` `wres`, `type(IXTdatum)` `arg1`, `type(IXTdatum)` `arg2`,  
`type(IXTstatus)` `status`)

Definition at line 293 of file `IXMdatum.f90`.

**6.62.2.3** subroutine `IXMdatum::IXFdivide_Datum::datumDivideSW`  
(`type(IXTdatum)` `wres`, `real(dp)` `arg1`, `type(IXTdatum)` `arg2`,  
`type(IXTstatus)` `status`)

Definition at line 309 of file `IXMdatum.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdatum.f90`

## 6.63 IXMdatum\_array::IXFdivide\_Datum\_array Interface Reference

### Public Member Functions

- `ts_Divide_datum_array`
- `tt_Divide_datum_array`
- `st_Divide_datum_array`

### 6.63.1 Detailed Description

Definition at line 55 of file `IXMdatum_array.f90`.

### 6.63.2 Member Function Documentation

**6.63.2.1** `IXMdatum_array::IXFdivide_Datum_array::ts_Divide_datum_array ()`

**6.63.2.2** `IXMdatum_array::IXFdivide_Datum_array::tt_Divide_datum_array ()`

**6.63.2.3** `IXMdatum_array::IXFdivide_Datum_array::st_Divide_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.64 IXMdataset\_2d::IXFdivide\_X Interface Reference

### Public Member Functions

- `IXFarray_X_divide_dataset_2d`
- `IXFdataset_1d_X_divide_dataset_2d`

#### 6.64.1 Detailed Description

Definition at line 213 of file `IXMdataset_2d.f90`.

#### 6.64.2 Member Function Documentation

**6.64.2.1** `IXMdataset_2d::IXFdivide_X::IXFarray_X_divide_dataset_2d ()`

**6.64.2.2** `IXMdataset_2d::IXFdivide_X::IXFdataset_1d_X_divide_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.65 IXMdataset\_2d::IXFdivide\_X\_dataset\_2d Interface Reference

### Public Member Functions

- IXFarray\_X\_divide\_dataset\_2d
- IXFdataset\_1d\_X\_divide\_dataset\_2d

### 6.65.1 Detailed Description

Definition at line 210 of file IXMdataset\_2d.f90.

### 6.65.2 Member Function Documentation

**6.65.2.1** IXMdataset\_2d::IXFdivide\_X\_dataset\_2d::IXFarray\_X\_divide\_dataset\_2d ()

**6.65.2.2** IXMdataset\_2d::IXFdivide\_X\_dataset\_2d::IXFdataset\_1d\_X\_divide\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- libclasses/IXMdataset\_2d.f90

## 6.66 IXMdataset\_2d::IXFdivide\_Y Interface Reference

### Public Member Functions

- IXFarray\_Y\_divide\_dataset\_2d
- IXFdataset\_1d\_Y\_divide\_dataset\_2d

#### 6.66.1 Detailed Description

Definition at line 239 of file IXMdataset\_2d.f90.

#### 6.66.2 Member Function Documentation

**6.66.2.1** IXMdataset\_2d::IXFdivide\_Y::IXFarray\_Y\_divide\_dataset\_2d ()

**6.66.2.2** IXMdataset\_2d::IXFdivide\_Y::IXFdataset\_1d\_Y\_divide\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- libclasses/IXMdataset\_2d.f90

## 6.67 IXMdataset\_2d::IXFdivide\_Y\_dataset\_2d Interface Reference

### Public Member Functions

- `IXFarray_Y_divide_dataset_2d`
- `IXFdataset_1d_Y_divide_dataset_2d`

### 6.67.1 Detailed Description

Definition at line 236 of file `IXMdataset_2d.f90`.

### 6.67.2 Member Function Documentation

**6.67.2.1** `IXMdataset_2d::IXFdivide_Y_dataset_2d::IXFarray_Y_divide_dataset_2d ()`

**6.67.2.2** `IXMdataset_2d::IXFdivide_Y_dataset_2d::IXFdataset_1d_Y_divide_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.68 IXMmaths\_basis::IXFdot Interface Reference

### 6.68.1 Detailed Description

Definition at line 22 of file IXMmaths\_basis.f90.

The documentation for this interface was generated from the following file:

- libcore/IXMmaths\_basis.f90

## 6.69 IXMtranslation::IXFdot Interface Reference

### 6.69.1 Detailed Description

Definition at line 47 of file IXMtranslation.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMtranslation.f90



## 6.70 IXMdatum\_array::IXFexp Interface Reference

### Public Member Functions

- [IXFexp\\_datum\\_array](#)

#### 6.70.1 Detailed Description

Definition at line 69 of file IXMdatum\_array.f90.

#### 6.70.2 Member Function Documentation

##### 6.70.2.1 IXMdatum\_array::IXFexp::IXFexp\_datum\_array ()

The documentation for this interface was generated from the following files:

- [libclasses/IXMdatum\\_array.f90](#)

## 6.71 IXMdataset\_1d::IXFexp Interface Reference

### Public Member Functions

- [IXFexp\\_dataset\\_1d](#)

#### 6.71.1 Detailed Description

Definition at line 168 of file IXMdataset\_1d.f90.

#### 6.71.2 Member Function Documentation

##### 6.71.2.1 IXMdataset\_1d::IXFexp::IXFexp\_dataset\_1d ()

The documentation for this interface was generated from the following files:

- [libclasses/IXMdataset\\_1d.f90](#)

## 6.72 IXMdataset\_2d::IXFexp Interface Reference

### Public Member Functions

- [IXFexp\\_dataset\\_2d](#)

#### 6.72.1 Detailed Description

Definition at line 244 of file IXMdataset\_2d.f90.

#### 6.72.2 Member Function Documentation

##### 6.72.2.1 IXMdataset\_2d::IXFexp::IXFexp\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- [libclasses/IXMdataset\\_2d.f90](#)

## 6.73 IXMdatum::IXFexp Interface Reference

### Public Member Functions

- `IXFexp_datum`

#### 6.73.1 Detailed Description

Definition at line 68 of file `IXMdatum.f90`.

#### 6.73.2 Member Function Documentation

##### 6.73.2.1 `IXMdatum::IXFexp::IXFexp_datum ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum.f90`

## 6.74 IXMfileio::IXFfile\_read Interface Reference

### Public Member Functions

- subroutine `IXFfile_read_fileio` (`fio`, `value`, `name`, `status`)

#### 6.74.1 Detailed Description

Definition at line 36 of file `IXMfileio.f90`.

#### 6.74.2 Member Function Documentation

- 6.74.2.1** subroutine `IXMfileio::IXFfile_read::IXFfile_read_fileio` (`type(IXTfileio) fio`, `type(IXTfileio) value`, `character(len=*) name`, `type(IXTstatus) status`)

Definition at line 306 of file `IXMfileio.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMfileio.f90`

## 6.75 IXMdata\_source::IXFfile\_read Interface Reference

### Public Member Functions

- subroutine `IXFfile_read_data_source` (`value`, `fio`, `name`, `status`)

#### 6.75.1 Detailed Description

Definition at line 23 of file `IXMdata_source.f90`.

#### 6.75.2 Member Function Documentation

- 6.75.2.1** subroutine `IXMdata_source::IXFfile_read::IXFfile_read_data_source`  
(`type(IXTdata_source)` *value*, `type(IXTfileio)` *fio*, `character(len=*)` *name*,  
`type(IXTstatus)` *status*)

Definition at line 70 of file `IXMdata_source.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdata_source.f90`

## 6.76 IXMhistory::IXFfile\_read Interface Reference

### Public Member Functions

- subroutine `IXFfile_read_history` (`value`, `fio`, `name`, `status`)

#### 6.76.1 Detailed Description

Definition at line 22 of file `IXMhistory.f90`.

#### 6.76.2 Member Function Documentation

- 6.76.2.1** subroutine `IXMhistory::IXFfile_read::IXFfile_read_history`  
(`type(IXThistory)` *value*, `type(IXTfileio)` *fio*, `character(len=*)` *name*,  
`type(IXTstatus)` *status*)

Definition at line 62 of file `IXMhistory.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMhistory.f90`

## 6.77 IXMfileio::IXFfile\_type Interface Reference

### Public Member Functions

- logical `IXFfile_check_type` (`file_name`, `ftype`)

#### 6.77.1 Detailed Description

Definition at line 42 of file `IXMfileio.f90`.

#### 6.77.2 Member Function Documentation

##### 6.77.2.1 `logical IXMfileio::IXFfile_type::IXFfile_check_type` (`character(len=*)`, `intent(in) file_name`, `integer(i4b)`, `intent(in) ftype`)

Definition at line 61 of file `IXMfileio.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMfileio.f90`



## 6.78 IXMfileio::IXFfile\_write Interface Reference

### Public Member Functions

- subroutine `IXFfile_write_fileio` (`fio`, `value`, `name`, `status`)

#### 6.78.1 Detailed Description

Definition at line 39 of file `IXMfileio.f90`.

#### 6.78.2 Member Function Documentation

- 6.78.2.1** subroutine `IXMfileio::IXFfile_write::IXFfile_write_fileio` (`type(IXTfileio)` *fio*, `type(IXTfileio)` *value*, `character(len=*)` *name*, `type(IXTstatus)` *status*)

Definition at line 318 of file `IXMfileio.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMfileio.f90`

## 6.79 IXMdata\_source::IXFfile\_write Interface Reference

### Public Member Functions

- subroutine `IXFfile_write_data_source` (`value`, `fi`, `name`, `status`)

#### 6.79.1 Detailed Description

Definition at line 26 of file `IXMdata_source.f90`.

#### 6.79.2 Member Function Documentation

- 6.79.2.1** subroutine `IXMdata_source::IXFfile_write::IXFfile_write_data_source`  
(`type(IXTdata_source)` *value*, `type(IXTfileio)` *fi*, `character(len=*)` *name*,  
`type(IXTstatus)` *status*)

Definition at line 79 of file `IXMdata_source.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdata_source.f90`

## 6.80 IXMhistory::IXFfile\_write Interface Reference

### Public Member Functions

- subroutine `IXFfile_write_history` (`value`, `fio`, `name`, `status`)

#### 6.80.1 Detailed Description

Definition at line 25 of file `IXMhistory.f90`.

#### 6.80.2 Member Function Documentation

- 6.80.2.1** subroutine `IXMhistory::IXFfile_write::IXFfile_write_history`  
(`type(IXThistory)` *value*, `type(IXTfileio)` *fio*, `character(len=*)` *name*,  
`type(IXTstatus)` *status*)

Definition at line 71 of file `IXMhistory.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMhistory.f90`

## 6.81 IXMdiffraction\_instrument::IXFget\_emode Interface Reference

### Public Member Functions

- subroutine `get_emode` (`d_inst`, `status`, `emode`, `efixed`)

#### 6.81.1 Detailed Description

Definition at line 29 of file `IXMdiffraction_instrument.f90`.

#### 6.81.2 Member Function Documentation

- 6.81.2.1** subroutine `IXMdiffraction_instrument::IXFget_emode::get_emode` (type `(IXTdiffraction_instrument)` `d_inst`, type `(IXTstatus)` `status`, integer(`i4b`) `emode`, real(`dp`), optional `efixed`)

Definition at line 49 of file `IXMdiffraction_instrument.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdiffraction_instrument.f90`

## 6.82 IXMchopper\_instrument::IXFget\_emode Interface Reference

### Public Member Functions

- subroutine `get_emode (c_inst, status, emode, efixed)`

#### 6.82.1 Detailed Description

Definition at line 27 of file `IXMchopper_instrument.f90`.

#### 6.82.2 Member Function Documentation

**6.82.2.1** subroutine `IXMchopper_instrument::IXFget_emode::get_emode` (type `(IXTchopper_instrument)` *c\_inst*, type `(IXTstatus)` *status*, integer(i4b) *emode*, real(dp), optional *efixed*)

Definition at line 49 of file `IXMchopper_instrument.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMchopper_instrument.f90`

## 6.83 IXMbase::IXFget\_integer\_array Interface Reference

### Public Member Functions

- subroutine `geti_1d` (`arr_in`, `status`, `arr_out`)
- subroutine `geti_2d` (`arr_in`, `status`, `arr_out`)

### 6.83.1 Detailed Description

Definition at line 39 of file `IXMbase.f90`.

### 6.83.2 Member Function Documentation

**6.83.2.1** subroutine `IXMbase::IXFget_integer_array::geti_1d`  
(`integer(i4b)`,`dimension(:)`,`intent(in) arr_in`, `type(IXTstatus) status`,  
`integer(i4b)`,`dimension(:)`,`intent(out)`,`optional arr_out`)

Definition at line 176 of file `IXMbase.f90`.

**6.83.2.2** subroutine `IXMbase::IXFget_integer_array::geti_2d`  
(`integer(i4b)`,`dimension(:,:)`,`intent(in) arr_in`, `type(IXTstatus) status`,  
`integer(i4b)`,`dimension(:,:)`,`intent(out)`,`optional arr_out`)

Definition at line 208 of file `IXMbase.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMbase.f90`

## 6.84 IXMdiffraction\_instrument::IXFget\_ptr Interface Reference

### Public Member Functions

- subroutine `get_ptr` (`di_ptr`)

#### 6.84.1 Detailed Description

Definition at line 24 of file `IXMdiffraction_instrument.f90`.

#### 6.84.2 Member Function Documentation

##### 6.84.2.1 subroutine `IXMdiffraction_instrument::IXFget_ptr::get_ptr` (`type(IXTdiffraction_instrument)`, pointer `di_ptr`)

Definition at line 43 of file `IXMdiffraction_instrument.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdiffraction_instrument.f90`

## 6.85 IXMchopper\_instrument::IXFget\_ptr Interface Reference

### Public Member Functions

- subroutine `get_ptr` (`ci_ptr`)

#### 6.85.1 Detailed Description

Definition at line 23 of file `IXMchopper_instrument.f90`.

#### 6.85.2 Member Function Documentation

##### 6.85.2.1 subroutine `IXMchopper_instrument::IXFget_ptr::get_ptr` (`type(IXTchopper_instrument)`, pointer `ci_ptr`)

Definition at line 42 of file `IXMchopper_instrument.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMchopper_instrument.f90`



## 6.86 IXMisis\_raw\_file::IXFget\_raw Interface Reference

### Public Member Functions

- subroutine `IXFget_real` (`handle`, `name`, `value`, `status`)
- subroutine `IXFget_real1` (`handle`, `name`, `value`, `status`)
- subroutine `IXFget_real2` (`handle`, `name`, `value`, `status`)
- subroutine `IXFget_int` (`handle`, `name`, `value`, `status`)
- subroutine `IXFget_int1` (`handle`, `name`, `value`, `status`)
- subroutine `IXFget_int2` (`handle`, `name`, `value`, `status`)
- subroutine `IXFget_dp` (`handle`, `name`, `value`, `status`)
- subroutine `IXFget_dp1` (`handle`, `name`, `value`, `status`)
- subroutine `IXFget_dp2` (`handle`, `name`, `value`, `status`)
- subroutine `IXFget_char` (`handle`, `name`, `value`, `status`)
- subroutine `IXFget_spectrum_d1` (`handle`, `ispec`, `d1`, `period`, `status`)
- subroutine `IXFget_spectrum_array_d1` (`handle`, `ispec`, `d1`, `period`, `status`)
- subroutine `IXFget_spectrum_d2` (`handle`, `ispec`, `d2`, `period`, `status`)
- subroutine `IXFget_spectrum_array_d2` (`handle`, `ispec`, `d2`, `periods`, `status`)
- subroutine `IXFget_data_i1` (`handle`, `spec_no`, `value`, `status`)
- subroutine `IXFget_data_i2` (`handle`, `spec_no`, `value`, `status`)

### 6.86.1 Detailed Description

Definition at line 19 of file `IXMisis_raw_file.f90`.

### 6.86.2 Member Function Documentation

**6.86.2.1** subroutine `IXMisis_raw_file::IXFget_raw::IXFget_real`  
 (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*,  
`real*4,intent(out)` *value*, `type(IXTstatus)`,target *status*)

Definition at line 459 of file `IXMisis_raw_file.f90`.

**6.86.2.2** subroutine `IXMisis_raw_file::IXFget_raw::IXFget_real1`  
 (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*,  
`real*4,dimension(:),intent(out)` *value*, `type(IXTstatus)`,target *status*)

Definition at line 474 of file `IXMisis_raw_file.f90`.

**6.86.2.3** subroutine `IXMisis_raw_file::IXFget_raw::IXFget_real2`  
 (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*,  
`real*4,dimension(:,:),intent(out)` *value*, `type(IXTstatus)`,target *status*)

Definition at line 489 of file `IXMisis_raw_file.f90`.

**6.86.2.4** subroutine `IXMisis_raw_file::IXFget_raw::IXFget_int`  
 (`type(IXTisis_raw_file)` *handle*, `character(len=*)` *name*, `integer` *value*,  
`type(IXTstatus)`,target *status*)

Definition at line 504 of file `IXMisis_raw_file.f90`.

**6.86.2.5** subroutine IXMisis\_raw\_file::IXFget\_raw::IXFget\_int1  
 (type(IXTisis\_raw\_file) *handle*, character(len=\*) *name*,  
 integer,dimension(:) *value*, type(IXTstatus),target *status*)

Definition at line 518 of file IXMisis\_raw\_file.f90.

**6.86.2.6** subroutine IXMisis\_raw\_file::IXFget\_raw::IXFget\_int2  
 (type(IXTisis\_raw\_file) *handle*, character(len=\*) *name*,  
 integer,dimension(:,:) *value*, type(IXTstatus),target *status*)

Definition at line 532 of file IXMisis\_raw\_file.f90.

**6.86.2.7** subroutine IXMisis\_raw\_file::IXFget\_raw::IXFget\_dp  
 (type(IXTisis\_raw\_file) *handle*, character(len=\*) *name*,  
 real(dp),intent(out) *value*, type(IXTstatus),target *status*)

Definition at line 395 of file IXMisis\_raw\_file.f90.

**6.86.2.8** subroutine IXMisis\_raw\_file::IXFget\_raw::IXFget\_dp1  
 (type(IXTisis\_raw\_file) *handle*, character(len=\*) *name*,  
 real(dp),dimension(:),intent(out) *value*, type(IXTstatus),target *status*)

Definition at line 410 of file IXMisis\_raw\_file.f90.

**6.86.2.9** subroutine IXMisis\_raw\_file::IXFget\_raw::IXFget\_dp2  
 (type(IXTisis\_raw\_file) *handle*, character(len=\*) *name*,  
 real(dp),dimension(:,:),intent(out) *value*, type(IXTstatus),target *status*)

Definition at line 427 of file IXMisis\_raw\_file.f90.

**6.86.2.10** subroutine IXMisis\_raw\_file::IXFget\_raw::IXFget\_char  
 (type(IXTisis\_raw\_file) *handle*, character(len=\*),intent(in) *name*,  
 character(len=\*),dimension(:),intent(out) *value*, type(IXTstatus),target  
*status*)

Definition at line 444 of file IXMisis\_raw\_file.f90.

**6.86.2.11** subroutine IXMisis\_raw\_file::IXFget\_raw::IXFget\_spectrum\_d1  
 (type(IXTisis\_raw\_file),intent(inout) *handle*, integer(i4b) *ispec*,  
 type(IXTdataset\_1d),intent(out) *d1*, integer(i4b),intent(in) *period*,  
 type(IXTstatus),target *status*)

Definition at line 332 of file IXMisis\_raw\_file.f90.

**6.86.2.12** subroutine IXMisis\_raw\_file::IXFget\_raw::IXFget\_spectrum\_array\_d1  
(type(IXTisis\_raw\_file) *handle*, integer,dimension(:) *ispec*,  
type(IXTdataset\_1d),dimension(:) *d1*, integer *period*,  
type(IXTstatus),target *status*)

Definition at line 311 of file IXMisis\_raw\_file.f90.

**6.86.2.13** subroutine IXMisis\_raw\_file::IXFget\_raw::IXFget\_spectrum\_d2  
(type(IXTisis\_raw\_file),intent(inout) *handle*,  
integer,dimension(:),intent(in) *ispec*, type(IXTdataset\_2d),intent(out)  
*d2*, integer,intent(in) *period*, type(IXTstatus),target *status*)

Definition at line 219 of file IXMisis\_raw\_file.f90.

**6.86.2.14** subroutine IXMisis\_raw\_file::IXFget\_raw::IXFget\_spectrum\_array\_d2  
(type(IXTisis\_raw\_file),intent(inout) *handle*,  
integer,dimension(:),intent(in) *ispec*, type(IXTdataset\_2d),dimension(:),intent(out) *d2*, integer,dimension(:),intent(in) *periods*,  
type(IXTstatus),target *status*)

Definition at line 288 of file IXMisis\_raw\_file.f90.

**6.86.2.15** subroutine IXMisis\_raw\_file::IXFget\_raw::IXFget\_data\_i1  
(type(IXTisis\_raw\_file) *handle*, integer *spec\_no*, integer,dimension(:)  
*value*, type(IXTstatus),target *status*)

Definition at line 546 of file IXMisis\_raw\_file.f90.

**6.86.2.16** subroutine IXMisis\_raw\_file::IXFget\_raw::IXFget\_data\_i2  
(type(IXTisis\_raw\_file) *handle*, integer,dimension(:) *spec\_no*,  
integer,dimension(:,) *value*, type(IXTstatus),target *status*)

Definition at line 560 of file IXMisis\_raw\_file.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMisis\_raw\_file.f90

## 6.87 IXMbase::IXFget\_real\_array Interface Reference

### Public Member Functions

- subroutine `getr_1d` (`arr_in`, `status`, `arr_out`)
- subroutine `getr_2d` (`arr_in`, `status`, `arr_out`)

#### 6.87.1 Detailed Description

Definition at line 35 of file `IXMbase.f90`.

#### 6.87.2 Member Function Documentation

**6.87.2.1** subroutine `IXMbase::IXFget_real_array::getr_1d`  
(`real(dp)`,`dimension(:)`,`intent(in) arr_in`, `type(IXTstatus) status`,  
`real(dp)`,`dimension(:)`,`intent(out)`,`optional arr_out`)

Definition at line 192 of file `IXMbase.f90`.

**6.87.2.2** subroutine `IXMbase::IXFget_real_array::getr_2d`  
(`real(dp)`,`dimension(:,:)`,`intent(in) arr_in`, `type(IXTstatus) status`,  
`real(dp)`,`dimension(:,:)` ,`intent(out)`,`optional arr_out`)

Definition at line 224 of file `IXMbase.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMbase.f90`

## 6.88 IXMdataset\_2d::IXFintegrate\_x\_dataset\_2d Interface Reference

### Public Member Functions

- subroutine `integrate_x_dataset_2d` (`wres`, `w1`, `x1`, `x2`, `status`)
- subroutine `integrate_x_arr_dataset_2d` (`wres`, `d2d`, `x1`, `x2`, `status`)

### 6.88.1 Detailed Description

Definition at line 57 of file `IXMdataset_2d.f90`.

### 6.88.2 Member Function Documentation

**6.88.2.1** subroutine `IXMdataset_2d::IXFintegrate_x_dataset_2d::integrate_x_dataset_2d` (`type(IXTdataset_1d)`, `intent(out)` `wres`, `type(IXTdataset_2d)`, `intent(in)` `w1`, `real(dp)`, `intent(in)` `x1`, `real(dp)`, `intent(in)` `x2`, `type(IXTstatus)`, `intent(inout)` `status`)

Definition at line 658 of file `IXMdataset_2d.f90`.

**6.88.2.2** subroutine `IXMdataset_2d::IXFintegrate_x_dataset_2d::integrate_x_arr_dataset_2d` (`type(IXTdataset_1d)`, `intent(out)` `wres`, `type(IXTdataset_2d)`, `intent(in)` `d2d`, `real(dp)`, `dimension(:)`, `intent(in)` `x1`, `real(dp)`, `dimension(:)`, `intent(in)` `x2`, `type(IXTstatus)`, `intent(inout)` `status`)

Definition at line 696 of file `IXMdataset_2d.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdataset_2d.f90`

## 6.89 IXMgroups::IXFis\_member\_groups Interface Reference

### Public Member Functions

- logical member\_byname (groups, this\_name, test\_name)
- logical member\_byid (groups, this\_id, test\_id)

#### 6.89.1 Detailed Description

Definition at line 49 of file IXMgroups.f90.

#### 6.89.2 Member Function Documentation

**6.89.2.1** logical IXMgroups::IXFis\_member\_groups::member\_byname  
(type(IXTgroups),intent(in) groups, character(len=\*),intent(in) this\_name, character(len=\*),intent(in) test\_name)

Definition at line 411 of file IXMgroups.f90.

**6.89.2.2** logical IXMgroups::IXFis\_member\_groups::member\_byid  
(type(IXTgroups),intent(in) groups, integer,intent(in) this\_id, integer,intent(in) test\_id)

Definition at line 393 of file IXMgroups.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMgroups.f90

## 6.90 IXMdatum\_array::IXFlog Interface Reference

### Public Member Functions

- `IXFlog_datum_array`

#### 6.90.1 Detailed Description

Definition at line 73 of file `IXMdatum_array.f90`.

#### 6.90.2 Member Function Documentation

##### 6.90.2.1 IXMdatum\_array::IXFlog::IXFlog\_datum\_array ()

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.91 IXMdataset\_1d::IXFlog Interface Reference

### Public Member Functions

- **IXFlog\_dataset\_1d**

#### 6.91.1 Detailed Description

Definition at line 172 of file IXMdataset\_1d.f90.

#### 6.91.2 Member Function Documentation

##### 6.91.2.1 IXMdataset\_1d::IXFlog::IXFlog\_dataset\_1d ()

The documentation for this interface was generated from the following files:

- libclasses/IXMdataset\_1d.f90



## 6.92 IXMdataset\_2d::IXFlog Interface Reference

### Public Member Functions

- [IXFlog\\_dataset\\_2d](#)

#### 6.92.1 Detailed Description

Definition at line 248 of file IXMdataset\_2d.f90.

#### 6.92.2 Member Function Documentation

##### 6.92.2.1 IXMdataset\_2d::IXFlog::IXFlog\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- [libclasses/IXMdataset\\_2d.f90](#)

## 6.93 IXMdatum::IXFlog Interface Reference

### Public Member Functions

- **IXFlog\_datum**

#### 6.93.1 Detailed Description

Definition at line 72 of file IXMdatum.f90.

#### 6.93.2 Member Function Documentation

##### 6.93.2.1 IXMdatum::IXFlog::IXFlog\_datum ()

The documentation for this interface was generated from the following files:

- **libclasses/IXMdatum.f90**

## 6.94 IXMindex::IXFlower\_index Interface Reference

### 6.94.1 Detailed Description

Definition at line 5 of file IXMindex.f90.

The documentation for this interface was generated from the following file:

- libcore/**IXMindex.f90**

## 6.95 IXMgroups::IXFmember\_list\_groups Interface Reference

### Public Member Functions

- subroutine `member_list_byname` (`groups`, `name`, `id_list`, `n`, `status`)
- subroutine `member_list_byid` (`groups`, `id`, `id_list`, `n`, `status`)

#### 6.95.1 Detailed Description

Definition at line 61 of file `IXMgroups.f90`.

#### 6.95.2 Member Function Documentation

**6.95.2.1** subroutine `IXMgroups::IXFmember_list_groups::member_list_byname`  
(`type(IXTgroups)`,`intent(in) groups`, `character(len=*)`,`intent(in) name`, `integer,dimension(:)` ,`intent(out) id_list`, `integer`,`intent(out) n`,  
`type(IXTstatus) status`)

Definition at line 232 of file `IXMgroups.f90`.

**6.95.2.2** subroutine `IXMgroups::IXFmember_list_groups::member_list_byid`  
(`type(IXTgroups)`,`intent(in) groups`, `integer`,`intent(in) id`,  
`integer,dimension(:)` ,`intent(out) id_list`, `integer`,`intent(out) n`,  
`type(IXTstatus) status`)

Definition at line 214 of file `IXMgroups.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMgroups.f90`

## 6.96 IXMdataset\_1d::IXFminus Interface Reference

### Public Member Functions

- `ta_minus_dataset_1d`
- `at_minus_dataset_1d`
- `ts_minus_dataset_1d`
- `tt_minus_dataset_1d`
- `st_minus_dataset_1d`

### 6.96.1 Detailed Description

Definition at line 92 of file IXMdataset\_1d.f90.

### 6.96.2 Member Function Documentation

**6.96.2.1** IXMdataset\_1d::IXFminus::ta\_minus\_dataset\_1d ()

**6.96.2.2** IXMdataset\_1d::IXFminus::at\_minus\_dataset\_1d ()

**6.96.2.3** IXMdataset\_1d::IXFminus::ts\_minus\_dataset\_1d ()

**6.96.2.4** IXMdataset\_1d::IXFminus::tt\_minus\_dataset\_1d ()

**6.96.2.5** IXMdataset\_1d::IXFminus::st\_minus\_dataset\_1d ()

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.97 IXMdataset\_2d::IXFminus Interface Reference

### Public Member Functions

- `t_at_minus_dataset_2d`
- `at_t_minus_dataset_2d`
- `at_minus_dataset_2d`
- `ta_minus_dataset_2d`
- `ts_minus_dataset_2d`
- `tt_minus_dataset_2d`
- `st_minus_dataset_2d`

### 6.97.1 Detailed Description

Definition at line 109 of file `IXMdataset_2d.f90`.

### 6.97.2 Member Function Documentation

**6.97.2.1** `IXMdataset_2d::IXFminus::t_at_minus_dataset_2d ()`

**6.97.2.2** `IXMdataset_2d::IXFminus::at_t_minus_dataset_2d ()`

**6.97.2.3** `IXMdataset_2d::IXFminus::at_minus_dataset_2d ()`

**6.97.2.4** `IXMdataset_2d::IXFminus::ta_minus_dataset_2d ()`

**6.97.2.5** `IXMdataset_2d::IXFminus::ts_minus_dataset_2d ()`

**6.97.2.6** `IXMdataset_2d::IXFminus::tt_minus_dataset_2d ()`

**6.97.2.7** `IXMdataset_2d::IXFminus::st_minus_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.98 IXMdatum::IXFminus Interface Reference

### Public Member Functions

- subroutine `datumMinusWS` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumMinusWW` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumMinusSW` (`wres`, `arg1`, `arg2`, `status`)

#### 6.98.1 Detailed Description

Definition at line 43 of file `IXMdatum.f90`.

#### 6.98.2 Member Function Documentation

**6.98.2.1** subroutine `IXMdatum::IXFminus::datumMinusWS` (`type(IXTdatum)`  
`wres`, `type(IXTdatum)` `arg1`, `real(dp)` `arg2`, `type(IXTstatus)` `status`)

Definition at line 246 of file `IXMdatum.f90`.

**6.98.2.2** subroutine `IXMdatum::IXFminus::datumMinusWW` (`type(IXTdatum)`  
`wres`, `type(IXTdatum)` `arg1`, `type(IXTdatum)` `arg2`, `type(IXTstatus)`  
`status`)

Definition at line 221 of file `IXMdatum.f90`.

**6.98.2.3** subroutine `IXMdatum::IXFminus::datumMinusSW` (`type(IXTdatum)`  
`wres`, `real(dp)` `arg1`, `type(IXTdatum)` `arg2`, `type(IXTstatus)` `status`)

Definition at line 236 of file `IXMdatum.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdatum.f90`

## 6.99 IXMdatum\_array::IXFminus Interface Reference

### Public Member Functions

- `ts_Minus_datum_array`
- `tt_Minus_datum_array`
- `st_Minus_datum_array`

### 6.99.1 Detailed Description

Definition at line 44 of file `IXMdatum_array.f90`.

### 6.99.2 Member Function Documentation

**6.99.2.1** `IXMdatum_array::IXFminus::ts_Minus_datum_array ()`

**6.99.2.2** `IXMdatum_array::IXFminus::tt_Minus_datum_array ()`

**6.99.2.3** `IXMdatum_array::IXFminus::st_Minus_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`



## 6.100 IXMdataset\_1d::IXFminus\_dataset\_1d Interface Reference

### Public Member Functions

- `ta_minus_dataset_1d`
- `at_minus_dataset_1d`
- `ts_minus_dataset_1d`
- `tt_minus_dataset_1d`
- `st_minus_dataset_1d`

### 6.100.1 Detailed Description

Definition at line 88 of file `IXMdataset_1d.f90`.

### 6.100.2 Member Function Documentation

**6.100.2.1** `IXMdataset_1d::IXFminus_dataset_1d::ta_minus_dataset_1d ()`

**6.100.2.2** `IXMdataset_1d::IXFminus_dataset_1d::at_minus_dataset_1d ()`

**6.100.2.3** `IXMdataset_1d::IXFminus_dataset_1d::ts_minus_dataset_1d ()`

**6.100.2.4** `IXMdataset_1d::IXFminus_dataset_1d::tt_minus_dataset_1d ()`

**6.100.2.5** `IXMdataset_1d::IXFminus_dataset_1d::st_minus_dataset_1d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.101 IXMdataset\_2d::IXFminus\_dataset\_2d Interface Reference

### Public Member Functions

- `t_at_minus_dataset_2d`
- `at_t_minus_dataset_2d`
- `at_minus_dataset_2d`
- `ta_minus_dataset_2d`
- `ts_minus_dataset_2d`
- `tt_minus_dataset_2d`
- `st_minus_dataset_2d`

### 6.101.1 Detailed Description

Definition at line 104 of file `IXMdataset_2d.f90`.

### 6.101.2 Member Function Documentation

**6.101.2.1** `IXMdataset_2d::IXFminus_dataset_2d::t_at_minus_dataset_2d ()`

**6.101.2.2** `IXMdataset_2d::IXFminus_dataset_2d::at_t_minus_dataset_2d ()`

**6.101.2.3** `IXMdataset_2d::IXFminus_dataset_2d::at_minus_dataset_2d ()`

**6.101.2.4** `IXMdataset_2d::IXFminus_dataset_2d::ta_minus_dataset_2d ()`

**6.101.2.5** `IXMdataset_2d::IXFminus_dataset_2d::ts_minus_dataset_2d ()`

**6.101.2.6** `IXMdataset_2d::IXFminus_dataset_2d::tt_minus_dataset_2d ()`

**6.101.2.7** `IXMdataset_2d::IXFminus_dataset_2d::st_minus_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.102 IXMdatum::IXFminus\_Datum Interface Reference

### Public Member Functions

- subroutine `datumMinusWS` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumMinusWW` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumMinusSW` (`wres`, `arg1`, `arg2`, `status`)

### 6.102.1 Detailed Description

Definition at line 40 of file `IXMdatum.f90`.

### 6.102.2 Member Function Documentation

**6.102.2.1** subroutine `IXMdatum::IXFminus_Datum::datumMinusWS`  
(`type(IXTdatum)` `wres`, `type(IXTdatum)` `arg1`, `real(dp)` `arg2`,  
`type(IXTstatus)` `status`)

Definition at line 246 of file `IXMdatum.f90`.

**6.102.2.2** subroutine `IXMdatum::IXFminus_Datum::datumMinusWW`  
(`type(IXTdatum)` `wres`, `type(IXTdatum)` `arg1`, `type(IXTdatum)` `arg2`,  
`type(IXTstatus)` `status`)

Definition at line 221 of file `IXMdatum.f90`.

**6.102.2.3** subroutine `IXMdatum::IXFminus_Datum::datumMinusSW`  
(`type(IXTdatum)` `wres`, `real(dp)` `arg1`, `type(IXTdatum)` `arg2`,  
`type(IXTstatus)` `status`)

Definition at line 236 of file `IXMdatum.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdatum.f90`

## 6.103 IXMdatum\_array::IXFminus\_datum\_array Interface Reference

### Public Member Functions

- `ts_Minus_datum_array`
- `tt_Minus_datum_array`
- `st_Minus_datum_array`

### 6.103.1 Detailed Description

Definition at line 41 of file `IXMdatum_array.f90`.

### 6.103.2 Member Function Documentation

**6.103.2.1** `IXMdatum_array::IXFminus_datum_array::ts_Minus_datum_array ()`

**6.103.2.2** `IXMdatum_array::IXFminus_datum_array::tt_Minus_datum_array ()`

**6.103.2.3** `IXMdatum_array::IXFminus_datum_array::st_Minus_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.104 IXMdataset\_2d::IXFminus\_X Interface Reference

### Public Member Functions

- IXFarray\_X\_minus\_dataset\_2d
- IXFdataset\_1d\_X\_minus\_dataset\_2d

#### 6.104.1 Detailed Description

Definition at line 199 of file IXMdataset\_2d.f90.

#### 6.104.2 Member Function Documentation

**6.104.2.1** IXMdataset\_2d::IXFminus\_X::IXFarray\_X\_minus\_dataset\_2d ()

**6.104.2.2** IXMdataset\_2d::IXFminus\_X::IXFdataset\_1d\_X\_minus\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- libclasses/IXMdataset\_2d.f90

## 6.105 IXMdataset\_2d::IXFminus\_X\_dataset\_2d Interface Reference

### Public Member Functions

- `IXFarray_X_minus_dataset_2d`
- `IXFdataset_1d_X_minus_dataset_2d`

### 6.105.1 Detailed Description

Definition at line 196 of file `IXMdataset_2d.f90`.

### 6.105.2 Member Function Documentation

**6.105.2.1** `IXMdataset_2d::IXFminus_X_dataset_2d::IXFarray_X_minus_dataset_2d ()`

**6.105.2.2** `IXMdataset_2d::IXFminus_X_dataset_2d::IXFdataset_1d_X_minus_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.106 IXMdataset\_2d::IXFminus\_Y Interface Reference

### Public Member Functions

- IXFarray\_Y\_minus\_dataset\_2d
- IXFdataset\_1d\_Y\_minus\_dataset\_2d

### 6.106.1 Detailed Description

Definition at line 227 of file IXMdataset\_2d.f90.

### 6.106.2 Member Function Documentation

**6.106.2.1** IXMdataset\_2d::IXFminus\_Y::IXFarray\_Y\_minus\_dataset\_2d ()

**6.106.2.2** IXMdataset\_2d::IXFminus\_Y::IXFdataset\_1d\_Y\_minus\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- libclasses/IXMdataset\_2d.f90

## 6.107 IXMdataset\_2d::IXFminus\_Y\_dataset\_2d Interface Reference

### Public Member Functions

- `IXFarray_Y_minus_dataset_2d`
- `IXFdataset_1d_Y_minus_dataset_2d`

### 6.107.1 Detailed Description

Definition at line 224 of file `IXMdataset_2d.f90`.

### 6.107.2 Member Function Documentation

**6.107.2.1** `IXMdataset_2d::IXFminus_Y_dataset_2d::IXFarray_Y_minus_dataset_2d ()`

**6.107.2.2** `IXMdataset_2d::IXFminus_Y_dataset_2d::IXFdataset_1d_Y_minus_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`



## 6.108 IXMmaths\_basis::IXFnorm Interface Reference

### 6.108.1 Detailed Description

Definition at line 18 of file IXMmaths\_basis.f90.

The documentation for this interface was generated from the following file:

- libcore/IXMmaths\_basis.f90

## 6.109 IXMtranslation::IXFnorm Interface Reference

### 6.109.1 Detailed Description

Definition at line 51 of file IXMtranslation.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMtranslation.f90

## 6.110 IXMoperation::IXFoperation\_run Interface Reference

### 6.110.1 Detailed Description

Definition at line 85 of file IXMoperation.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMoperation.f90

## 6.111 IXMoperation::IXFoperation\_run Interface Reference

### 6.111.1 Detailed Description

Definition at line 85 of file IXMoperation.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMoperation.f90

## 6.112 IXMoperation::IXFoperation\_run Interface Reference

### 6.112.1 Detailed Description

Definition at line 85 of file IXMoperation.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMoperation.f90

## 6.113 IXMoperation::IXFoperation\_run\_alloc Interface Reference

### Public Member Functions

- `runOperationAlloc1d`
- `runOperationAlloc2d`
- `runOperationAlloc3d`
- `runOperationAlloc4d`
- `runOperationAlloc1i`
- `runOperationAlloc2i`
- `runOperationAlloc3i`
- `runOperationAlloc4i`
- `runOperationAlloc1c`

### 6.113.1 Detailed Description

Definition at line 102 of file `IXMoperation.f90`.

### 6.113.2 Member Function Documentation

**6.113.2.1** `IXMoperation::IXFoperation_run_alloc::runOperationAlloc1d ()`

**6.113.2.2** `IXMoperation::IXFoperation_run_alloc::runOperationAlloc2d ()`

**6.113.2.3** `IXMoperation::IXFoperation_run_alloc::runOperationAlloc3d ()`

**6.113.2.4** `IXMoperation::IXFoperation_run_alloc::runOperationAlloc4d ()`

**6.113.2.5** `IXMoperation::IXFoperation_run_alloc::runOperationAlloc1i ()`

**6.113.2.6** `IXMoperation::IXFoperation_run_alloc::runOperationAlloc2i ()`

**6.113.2.7** `IXMoperation::IXFoperation_run_alloc::runOperationAlloc3i ()`

**6.113.2.8** `IXMoperation::IXFoperation_run_alloc::runOperationAlloc4i ()`

**6.113.2.9** `IXMoperation::IXFoperation_run_alloc::runOperationAlloc1c ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMoperation.f90`

## 6.114 IXMoperation::IXFoperation\_run\_ptr Interface Reference

### Public Member Functions

- `runOperationPtr1d`
- `runOperationPtr2d`
- `runOperationPtr3d`
- `runOperationPtr4d`
- `runOperationPtr1i`
- `runOperationPtr2i`
- `runOperationPtr3i`
- `runOperationPtr4i`

#### 6.114.1 Detailed Description

Definition at line 97 of file `IXMoperation.f90`.

#### 6.114.2 Member Function Documentation

**6.114.2.1** `IXMoperation::IXFoperation_run_ptr::runOperationPtr1d ()`

**6.114.2.2** `IXMoperation::IXFoperation_run_ptr::runOperationPtr2d ()`

**6.114.2.3** `IXMoperation::IXFoperation_run_ptr::runOperationPtr3d ()`

**6.114.2.4** `IXMoperation::IXFoperation_run_ptr::runOperationPtr4d ()`

**6.114.2.5** `IXMoperation::IXFoperation_run_ptr::runOperationPtr1i ()`

**6.114.2.6** `IXMoperation::IXFoperation_run_ptr::runOperationPtr2i ()`

**6.114.2.7** `IXMoperation::IXFoperation_run_ptr::runOperationPtr3i ()`

**6.114.2.8** `IXMoperation::IXFoperation_run_ptr::runOperationPtr4i ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMoperation.f90`

## 6.115 IXMoperation::IXFoperationMake Interface Reference

### Public Member Functions

- subroutine `makeOperationDisplay` (`op`, `op_display`, `status`)
- subroutine `makeOperationMatlabRead` (`op`, `op_matlabread`, `status`)
- subroutine `makeOperationMatlabWrite` (`op`, `op_matlabwrite`, `status`)
- subroutine `makeOperationGet` (`op`, `op_get`, `status`)
- subroutine `makeOperationSet` (`op`, `op_set`, `status`)
- subroutine `makeOperationFileRead` (`op`, `op_fileread`, `status`)
- subroutine `makeOperationFileWrite` (`op`, `op_filewrite`, `status`)
- subroutine `makeOperationInit` (`op`, `op_init`, `status`)

### 6.115.1 Detailed Description

Definition at line 79 of file `IXMoperation.f90`.

### 6.115.2 Member Function Documentation

- 6.115.2.1** subroutine `IXMoperation::IXFoperationMake::makeOperationDisplay` (`type(IXToperation)` *op*, `type(IXTop_display)` *op\_display*, `type(IXTstatus)` *status*)

Definition at line 710 of file `IXMoperation.f90`.

- 6.115.2.2** subroutine `IXMoperation::IXFoperationMake::makeOperationMatlabRead` (`type(IXToperation)` *op*, `type(IXTop_matlabread)` *op\_matlabread*, `type(IXTstatus)` *status*)

Definition at line 750 of file `IXMoperation.f90`.

- 6.115.2.3** subroutine `IXMoperation::IXFoperationMake::makeOperationMatlabWrite` (`type(IXToperation)` *op*, `type(IXTop_matlabwrite)` *op\_matlabwrite*, `type(IXTstatus)` *status*)

Definition at line 764 of file `IXMoperation.f90`.

- 6.115.2.4** subroutine `IXMoperation::IXFoperationMake::makeOperationGet` (`type(IXToperation)` *op*, `type(IXTop_get)` *op\_get*, `type(IXTstatus)` *status*)

Definition at line 737 of file `IXMoperation.f90`.

- 6.115.2.5** subroutine `IXMoperation::IXFoperationMake::makeOperationSet` (`type(IXToperation)` *op*, `type(IXTop_set)` *op\_set*, `type(IXTstatus)` *status*)

Definition at line 724 of file `IXMoperation.f90`.



**6.115.2.6** subroutine `IXMoperation::IXFoperationMake::makeOperationFileRead`  
(`type(IXToperation) op`, `type(IXTop_fileread) op_fileread`,  
`type(IXTstatus) status`)

Definition at line 778 of file `IXMoperation.f90`.

**6.115.2.7** subroutine `IXMoperation::IXFoperationMake::makeOperationFileWrite`  
(`type(IXToperation) op`, `type(IXTop_filewrite) op_filewrite`,  
`type(IXTstatus) status`)

Definition at line 791 of file `IXMoperation.f90`.

**6.115.2.8** subroutine `IXMoperation::IXFoperationMake::makeOperationInit`  
(`type(IXToperation) op`, `type(IXTop_init) op_init`, `type(IXTstatus)`  
`status`)

Definition at line 804 of file `IXMoperation.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMoperation.f90`

## 6.116 IXMoperation::IXFoperationPrint Interface Reference

### Public Member Functions

- `runOperationPrint1d`
- `runOperationPrint2d`
- `runOperationPrint3d`
- `runOperationPrint4d`
- `runOperationPrint1i`
- `runOperationPrint2i`
- `runOperationPrint3i`
- `runOperationPrint4i`
- `runOperationPrint1c`
- `runOperationPrint2c`
- `runOperationPrint3c`
- `runOperationPrint4c`

### 6.116.1 Detailed Description

Definition at line 108 of file `IXMoperation.f90`.

### 6.116.2 Member Function Documentation

- 6.116.2.1 `IXMoperation::IXFoperationPrint::runOperationPrint1d ()`
- 6.116.2.2 `IXMoperation::IXFoperationPrint::runOperationPrint2d ()`
- 6.116.2.3 `IXMoperation::IXFoperationPrint::runOperationPrint3d ()`
- 6.116.2.4 `IXMoperation::IXFoperationPrint::runOperationPrint4d ()`
- 6.116.2.5 `IXMoperation::IXFoperationPrint::runOperationPrint1i ()`
- 6.116.2.6 `IXMoperation::IXFoperationPrint::runOperationPrint2i ()`
- 6.116.2.7 `IXMoperation::IXFoperationPrint::runOperationPrint3i ()`
- 6.116.2.8 `IXMoperation::IXFoperationPrint::runOperationPrint4i ()`
- 6.116.2.9 `IXMoperation::IXFoperationPrint::runOperationPrint1c ()`
- 6.116.2.10 `IXMoperation::IXFoperationPrint::runOperationPrint2c ()`
- 6.116.2.11 `IXMoperation::IXFoperationPrint::runOperationPrint3c ()`
- 6.116.2.12 `IXMoperation::IXFoperationPrint::runOperationPrint4c ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMoperation.f90`

## 6.117 IXMgroups::IXFparent\_groups Interface Reference

### 6.117.1 Detailed Description

Definition at line 45 of file IXMgroups.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMgroups.f90

## 6.118 IXMgroups::IXFparent\_id\_groups Interface Reference

### Public Member Functions

- integer `parent_id_byname` (`groups`, `name`)
- integer `parent_id_byid` (`groups`, `id`)

### 6.118.1 Detailed Description

Definition at line 41 of file `IXMgroups.f90`.

### 6.118.2 Member Function Documentation

#### 6.118.2.1 integer IXMgroups::IXFparent\_id\_groups::parent\_id\_byname (type(IXTgroups),intent(in) *groups*, character(len=\*),intent(in) *name*)

Definition at line 338 of file `IXMgroups.f90`.

#### 6.118.2.2 integer IXMgroups::IXFparent\_id\_groups::parent\_id\_byid (type(IXTgroups),intent(in) *groups*, integer,intent(in) *id*)

Definition at line 352 of file `IXMgroups.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMgroups.f90`

## 6.119 IXMgroups::IXFparent\_list\_groups Interface Reference

### Public Member Functions

- subroutine `parent_list_byname` (`groups`, `name`, `id_list`, `n`, `status`)
- subroutine `parent_list_byid` (`groups`, `id`, `id_list`, `n`, `status`)

### 6.119.1 Detailed Description

Definition at line 57 of file `IXMgroups.f90`.

### 6.119.2 Member Function Documentation

**6.119.2.1** subroutine `IXMgroups::IXFparent_list_groups::parent_list_byname`  
(`type(IXTgroups)`,`intent(in)` `groups`, `character(len=*)`,`intent(in)` `name`,  
`integer,dimension(:)` ,`intent(out)` `id_list`, `integer`,`intent(out)` `n`,  
`type(IXTstatus)` `status`)

Definition at line 199 of file `IXMgroups.f90`.

**6.119.2.2** subroutine `IXMgroups::IXFparent_list_groups::parent_list_byid`  
(`type(IXTgroups)`,`intent(in)` `groups`, `integer`,`intent(in)` `id`,  
`integer,dimension(:)` ,`intent(out)` `id_list`, `integer`,`intent(out)` `n`,  
`type(IXTstatus)` `status`)

Definition at line 175 of file `IXMgroups.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMgroups.f90`

## 6.120 IXMdataset\_1d::IXFplus Interface Reference

### Public Member Functions

- `ta_plus_dataset_1d`
- `at_plus_dataset_1d`
- `ts_plus_dataset_1d`
- `tt_plus_dataset_1d`
- `st_plus_dataset_1d`

### 6.120.1 Detailed Description

Definition at line 67 of file `IXMdataset_1d.f90`.

### 6.120.2 Member Function Documentation

**6.120.2.1** `IXMdataset_1d::IXFplus::ta_plus_dataset_1d ()`

**6.120.2.2** `IXMdataset_1d::IXFplus::at_plus_dataset_1d ()`

**6.120.2.3** `IXMdataset_1d::IXFplus::ts_plus_dataset_1d ()`

**6.120.2.4** `IXMdataset_1d::IXFplus::tt_plus_dataset_1d ()`

**6.120.2.5** `IXMdataset_1d::IXFplus::st_plus_dataset_1d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.121 IXMdataset\_2d::IXFplus Interface Reference

### Public Member Functions

- `t_at_plus_dataset_2d`
- `at_t_plus_dataset_2d`
- `ts_plus_dataset_2d`
- `tt_plus_dataset_2d`
- `st_plus_dataset_2d`
- `at_Plus_dataset_2d`
- `ta_Plus_dataset_2d`

#### 6.121.1 Detailed Description

Definition at line 82 of file `IXMdataset_2d.f90`.

#### 6.121.2 Member Function Documentation

**6.121.2.1** `IXMdataset_2d::IXFplus::t_at_plus_dataset_2d ()`

**6.121.2.2** `IXMdataset_2d::IXFplus::at_t_plus_dataset_2d ()`

**6.121.2.3** `IXMdataset_2d::IXFplus::ts_plus_dataset_2d ()`

**6.121.2.4** `IXMdataset_2d::IXFplus::tt_plus_dataset_2d ()`

**6.121.2.5** `IXMdataset_2d::IXFplus::st_plus_dataset_2d ()`

**6.121.2.6** `IXMdataset_2d::IXFplus::at_Plus_dataset_2d ()`

**6.121.2.7** `IXMdataset_2d::IXFplus::ta_Plus_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.122 IXMdatum::IXFplus Interface Reference

### Public Member Functions

- subroutine `datumPlusWS` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumPlusWW` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumPlusSW` (`wres`, `arg1`, `arg2`, `status`)

### 6.122.1 Detailed Description

Definition at line 36 of file `IXMdatum.f90`.

### 6.122.2 Member Function Documentation

**6.122.2.1** subroutine `IXMdatum::IXFplus::datumPlusWS` (`type(IXTdatum)` `wres`, `type(IXTdatum)` `arg1`, `real(dp)` `arg2`, `type(IXTstatus)` `status`)

Definition at line 201 of file `IXMdatum.f90`.

**6.122.2.2** subroutine `IXMdatum::IXFplus::datumPlusWW` (`type(IXTdatum)` `wres`, `type(IXTdatum)` `arg1`, `type(IXTdatum)` `arg2`, `type(IXTstatus)` `status`)

Definition at line 186 of file `IXMdatum.f90`.

**6.122.2.3** subroutine `IXMdatum::IXFplus::datumPlusSW` (`type(IXTdatum)` `wres`, `real(dp)` `arg1`, `type(IXTdatum)` `arg2`, `type(IXTstatus)` `status`)

Definition at line 211 of file `IXMdatum.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdatum.f90`



## 6.123 IXMdatum\_array::IXFplus Interface Reference

### Public Member Functions

- `ts_Plus_datum_array`
- `tt_Plus_datum_array`
- `st_Plus_datum_array`

#### 6.123.1 Detailed Description

Definition at line 37 of file `IXMdatum_array.f90`.

#### 6.123.2 Member Function Documentation

**6.123.2.1** `IXMdatum_array::IXFplus::ts_Plus_datum_array ()`

**6.123.2.2** `IXMdatum_array::IXFplus::tt_Plus_datum_array ()`

**6.123.2.3** `IXMdatum_array::IXFplus::st_Plus_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.124 IXMdataset\_1d::IXFplus\_dataset\_1d Interface Reference

### Public Member Functions

- `ta_plus_dataset_1d`
- `at_plus_dataset_1d`
- `ts_plus_dataset_1d`
- `tt_plus_dataset_1d`
- `st_plus_dataset_1d`

### 6.124.1 Detailed Description

Definition at line 63 of file `IXMdataset_1d.f90`.

### 6.124.2 Member Function Documentation

**6.124.2.1** `IXMdataset_1d::IXFplus_dataset_1d::ta_plus_dataset_1d ()`

**6.124.2.2** `IXMdataset_1d::IXFplus_dataset_1d::at_plus_dataset_1d ()`

**6.124.2.3** `IXMdataset_1d::IXFplus_dataset_1d::ts_plus_dataset_1d ()`

**6.124.2.4** `IXMdataset_1d::IXFplus_dataset_1d::tt_plus_dataset_1d ()`

**6.124.2.5** `IXMdataset_1d::IXFplus_dataset_1d::st_plus_dataset_1d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.125 IXMdataset\_2d::IXFplus\_dataset\_2d Interface Reference

### Public Member Functions

- `t_at_plus_dataset_2d`
- `at_t_plus_dataset_2d`
- `ta_Plus_dataset_2d`
- `at_plus_dataset_2d`
- `ts_plus_dataset_2d`
- `tt_plus_dataset_2d`
- `st_plus_dataset_2d`

#### 6.125.1 Detailed Description

Definition at line 77 of file IXMdataset\_2d.f90.

#### 6.125.2 Member Function Documentation

**6.125.2.1** IXMdataset\_2d::IXFplus\_dataset\_2d::t\_at\_plus\_dataset\_2d ()

**6.125.2.2** IXMdataset\_2d::IXFplus\_dataset\_2d::at\_t\_plus\_dataset\_2d ()

**6.125.2.3** IXMdataset\_2d::IXFplus\_dataset\_2d::ta\_Plus\_dataset\_2d ()

**6.125.2.4** IXMdataset\_2d::IXFplus\_dataset\_2d::at\_plus\_dataset\_2d ()

**6.125.2.5** IXMdataset\_2d::IXFplus\_dataset\_2d::ts\_plus\_dataset\_2d ()

**6.125.2.6** IXMdataset\_2d::IXFplus\_dataset\_2d::tt\_plus\_dataset\_2d ()

**6.125.2.7** IXMdataset\_2d::IXFplus\_dataset\_2d::st\_plus\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.126 IXMdatum::IXFplus\_Datum Interface Reference

### Public Member Functions

- subroutine `datumPlusWS` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumPlusWW` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumPlusSW` (`wres`, `arg1`, `arg2`, `status`)

### 6.126.1 Detailed Description

Definition at line 33 of file `IXMdatum.f90`.

### 6.126.2 Member Function Documentation

**6.126.2.1** subroutine `IXMdatum::IXFplus_Datum::datumPlusWS`  
(`type(IXTdatum)` `wres`, `type(IXTdatum)` `arg1`, `real(dp)` `arg2`,  
`type(IXTstatus)` `status`)

Definition at line 201 of file `IXMdatum.f90`.

**6.126.2.2** subroutine `IXMdatum::IXFplus_Datum::datumPlusWW`  
(`type(IXTdatum)` `wres`, `type(IXTdatum)` `arg1`, `type(IXTdatum)` `arg2`,  
`type(IXTstatus)` `status`)

Definition at line 186 of file `IXMdatum.f90`.

**6.126.2.3** subroutine `IXMdatum::IXFplus_Datum::datumPlusSW`  
(`type(IXTdatum)` `wres`, `real(dp)` `arg1`, `type(IXTdatum)` `arg2`,  
`type(IXTstatus)` `status`)

Definition at line 211 of file `IXMdatum.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdatum.f90`

## 6.127 IXMdatum\_array::IXFplus\_Datum\_array Interface Reference

### Public Member Functions

- `ts_Plus_datum_array`
- `tt_Plus_datum_array`
- `st_Plus_datum_array`

### 6.127.1 Detailed Description

Definition at line 34 of file `IXMdatum_array.f90`.

### 6.127.2 Member Function Documentation

**6.127.2.1** `IXMdatum_array::IXFplus_Datum_array::ts_Plus_datum_array ()`

**6.127.2.2** `IXMdatum_array::IXFplus_Datum_array::tt_Plus_datum_array ()`

**6.127.2.3** `IXMdatum_array::IXFplus_Datum_array::st_Plus_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.128 IXMdataset\_2d::IXFplus\_X Interface Reference

### Public Member Functions

- `IXFarray_X_plus_dataset_2d`
- `IXFdataset_1d_X_plus_dataset_2d`

### 6.128.1 Detailed Description

Definition at line 193 of file `IXMdataset_2d.f90`.

### 6.128.2 Member Function Documentation

**6.128.2.1** `IXMdataset_2d::IXFplus_X::IXFarray_X_plus_dataset_2d ()`

**6.128.2.2** `IXMdataset_2d::IXFplus_X::IXFdataset_1d_X_plus_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.129 IXMdataset\_2d::IXFplus\_X\_dataset\_2d Interface Reference

### Public Member Functions

- IXFarray\_X\_plus\_dataset\_2d
- IXFdataset\_1d\_X\_plus\_dataset\_2d

### 6.129.1 Detailed Description

Definition at line 190 of file IXMdataset\_2d.f90.

### 6.129.2 Member Function Documentation

**6.129.2.1** IXMdataset\_2d::IXFplus\_X\_dataset\_2d::IXFarray\_X\_plus\_dataset\_2d ()

**6.129.2.2** IXMdataset\_2d::IXFplus\_X\_dataset\_2d::IXFdataset\_1d\_X\_plus\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- libclasses/IXMdataset\_2d.f90

## 6.130 IXMdataset\_2d::IXFplus\_Y Interface Reference

### Public Member Functions

- IXFarray\_Y\_plus\_dataset\_2d
- IXFdataset\_1d\_Y\_plus\_dataset\_2d

### 6.130.1 Detailed Description

Definition at line 220 of file IXMdataset\_2d.f90.

### 6.130.2 Member Function Documentation

**6.130.2.1** IXMdataset\_2d::IXFplus\_Y::IXFarray\_Y\_plus\_dataset\_2d ()

**6.130.2.2** IXMdataset\_2d::IXFplus\_Y::IXFdataset\_1d\_Y\_plus\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- libclasses/IXMdataset\_2d.f90



## 6.131 IXMdataset\_2d::IXFplus\_Y\_dataset\_2d Interface Reference

### Public Member Functions

- IXFarray\_Y\_plus\_dataset\_2d
- IXFdataset\_1d\_Y\_plus\_dataset\_2d

### 6.131.1 Detailed Description

Definition at line 217 of file IXMdataset\_2d.f90.

### 6.131.2 Member Function Documentation

**6.131.2.1** IXMdataset\_2d::IXFplus\_Y\_dataset\_2d::IXFarray\_Y\_plus\_dataset\_2d ()

**6.131.2.2** IXMdataset\_2d::IXFplus\_Y\_dataset\_2d::IXFdataset\_1d\_Y\_plus\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- libclasses/IXMdataset\_2d.f90

## 6.132 IXMdata::IXFpopulate\_data Interface Reference

### Public Member Functions

- subroutine `IXFpopulate_data_dso` (`data`, `period`, `map`, `mask`, `status`, `inputsource`, `dso`, `det_ptr`, `spe_ptr`, `efixed`, `emode`, `L1`, `uflag`, `rflag`, `rbparams`, `units_out`, `opt`, `bgrd`)

### 6.132.1 Detailed Description

Definition at line 32 of file `IXMdata.f90`.

### 6.132.2 Member Function Documentation

- 6.132.2.1** subroutine `IXMdata::IXFpopulate_data::IXFpopulate_data_dso`  
 (`type(IXTdata) data`, `integer(i4b),intent(in) period`,  
`type(IXTmap),intent(in) map`, `type(IXTmask),intent(in) mask`,  
`type(IXTstatus) status`, `type(IXTisis_raw_file),intent(inout)`  
`inputsource`, `type(IXTdata_source),intent(in) dso`,  
`type(IXTdetector),pointer det_ptr`, `type(IXTspectra),pointer`  
`spe_ptr`, `real(dp),intent(in) efixed`, `integer(i4b),intent(in) emode`,  
`real(dp),intent(in) L1`, `logical,intent(in) uflag`, `logical,intent(in)`  
`rflag`, `real(dp),dimension(:),intent(in),optional rbparams`,  
`type(IXTunits),intent(in),optional units_out`, `type(IXToptions),optional`  
`opt`, `real(dp),dimension(2),intent(in),optional bgrd`)

Definition at line 766 of file `IXMdata.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdata.f90`

## 6.133 IXMspectra::IXFpopulate\_spectra Interface Reference

### Public Member Functions

- subroutine `populate_list_dso_isis` (`spectra`, `inputsource`, `spec_list`, `list_out`, `status`)

#### 6.133.1 Detailed Description

Definition at line 41 of file `IXMspectra.f90`.

#### 6.133.2 Member Function Documentation

- 6.133.2.1** subroutine `IXMspectra::IXFpopulate_spectra::populate_list_dso_isis`  
(`type(IXTspectra) spectra`, `type(IXTisis_raw_file),intent(in)`  
`inputsource`, `integer(i4b),dimension(:),intent(in) spec_list`,  
`integer(i4b),dimension(:),allocatable list_out`, `type(IXTstatus) status`)

Definition at line 332 of file `IXMspectra.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMspectra.f90`

## 6.134 IXMdatum\_array::IXFpower Interface Reference

### Public Member Functions

- `ts_Power_datum_array`
- `tt_Power_datum_array`
- `st_Power_datum_array`

#### 6.134.1 Detailed Description

Definition at line 65 of file `IXMdatum_array.f90`.

#### 6.134.2 Member Function Documentation

**6.134.2.1** `IXMdatum_array::IXFpower::ts_Power_datum_array ()`

**6.134.2.2** `IXMdatum_array::IXFpower::tt_Power_datum_array ()`

**6.134.2.3** `IXMdatum_array::IXFpower::st_Power_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.135 IXMdataset\_1d::IXFpower Interface Reference

### Public Member Functions

- `ts_power_dataset_1d`
- `tt_power_dataset_1d`
- `st_power_dataset_1d`

### 6.135.1 Detailed Description

Definition at line 164 of file IXMdataset\_1d.f90.

### 6.135.2 Member Function Documentation

**6.135.2.1** IXMdataset\_1d::IXFpower::ts\_power\_dataset\_1d ()

**6.135.2.2** IXMdataset\_1d::IXFpower::tt\_power\_dataset\_1d ()

**6.135.2.3** IXMdataset\_1d::IXFpower::st\_power\_dataset\_1d ()

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.136 IXMdataset\_2d::IXFpower Interface Reference

### Public Member Functions

- `ts_power_dataset_2d`
- `tt_power_dataset_2d`
- `st_power_dataset_2d`

### 6.136.1 Detailed Description

Definition at line 186 of file `IXMdataset_2d.f90`.

### 6.136.2 Member Function Documentation

**6.136.2.1** `IXMdataset_2d::IXFpower::ts_power_dataset_2d ()`

**6.136.2.2** `IXMdataset_2d::IXFpower::tt_power_dataset_2d ()`

**6.136.2.3** `IXMdataset_2d::IXFpower::st_power_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.137 IXMdatum::IXFpower Interface Reference

### Public Member Functions

- subroutine `datumPowerWS` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumPowerWW` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumPowerSW` (`wres`, `arg1`, `arg2`, `status`)

#### 6.137.1 Detailed Description

Definition at line 64 of file `IXMdatum.f90`.

#### 6.137.2 Member Function Documentation

**6.137.2.1** subroutine `IXMdatum::IXFpower::datumPowerWS` (`type(IXTdatum)` *wres*, `type(IXTdatum)` *arg1*, `real(dp)` *arg2*, `type(IXTstatus)` *status*)

Definition at line 350 of file `IXMdatum.f90`.

**6.137.2.2** subroutine `IXMdatum::IXFpower::datumPowerWW` (`type(IXTdatum)` *wres*, `type(IXTdatum)` *arg1*, `type(IXTdatum)` *arg2*, `type(IXTstatus)` *status*)

Definition at line 331 of file `IXMdatum.f90`.

**6.137.2.3** subroutine `IXMdatum::IXFpower::datumPowerSW` (`type(IXTdatum)` *wres*, `real(dp)` *arg1*, `type(IXTdatum)` *arg2*, `type(IXTstatus)` *status*)

Definition at line 362 of file `IXMdatum.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdatum.f90`

## 6.138 IXMdataset\_1d::IXFpower\_dataset\_1d Interface Reference

### Public Member Functions

- `ts_power_dataset_1d`
- `tt_power_dataset_1d`
- `st_power_dataset_1d`

### 6.138.1 Detailed Description

Definition at line 161 of file `IXMdataset_1d.f90`.

### 6.138.2 Member Function Documentation

**6.138.2.1** `IXMdataset_1d::IXFpower_dataset_1d::ts_power_dataset_1d ()`

**6.138.2.2** `IXMdataset_1d::IXFpower_dataset_1d::tt_power_dataset_1d ()`

**6.138.2.3** `IXMdataset_1d::IXFpower_dataset_1d::st_power_dataset_1d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`



## 6.139 IXMdataset\_2d::IXFpower\_dataset\_2d Interface Reference

### Public Member Functions

- `ts_power_dataset_2d`
- `tt_power_dataset_2d`
- `st_power_dataset_2d`

### 6.139.1 Detailed Description

Definition at line 183 of file IXMdataset\_2d.f90.

### 6.139.2 Member Function Documentation

**6.139.2.1** `IXMdataset_2d::IXFpower_dataset_2d::ts_power_dataset_2d ()`

**6.139.2.2** `IXMdataset_2d::IXFpower_dataset_2d::tt_power_dataset_2d ()`

**6.139.2.3** `IXMdataset_2d::IXFpower_dataset_2d::st_power_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.140 IXMdatum::IXFpower\_Datum Interface Reference

### Public Member Functions

- subroutine `datumPowerWS` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumPowerWW` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumPowerSW` (`wres`, `arg1`, `arg2`, `status`)

### 6.140.1 Detailed Description

Definition at line 61 of file `IXMdatum.f90`.

### 6.140.2 Member Function Documentation

**6.140.2.1** subroutine `IXMdatum::IXFpower_Datum::datumPowerWS`  
(`type(IXTdatum)` *wres*, `type(IXTdatum)` *arg1*, `real(dp)` *arg2*,  
`type(IXTstatus)` *status*)

Definition at line 350 of file `IXMdatum.f90`.

**6.140.2.2** subroutine `IXMdatum::IXFpower_Datum::datumPowerWW`  
(`type(IXTdatum)` *wres*, `type(IXTdatum)` *arg1*, `type(IXTdatum)` *arg2*,  
`type(IXTstatus)` *status*)

Definition at line 331 of file `IXMdatum.f90`.

**6.140.2.3** subroutine `IXMdatum::IXFpower_Datum::datumPowerSW`  
(`type(IXTdatum)` *wres*, `real(dp)` *arg1*, `type(IXTdatum)` *arg2*,  
`type(IXTstatus)` *status*)

Definition at line 362 of file `IXMdatum.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdatum.f90`

## 6.141 IXMdatum\_array::IXFpower\_Datum\_array Interface Reference

### Public Member Functions

- `ts_Power_datum_array`
- `tt_Power_datum_array`
- `st_Power_datum_array`

#### 6.141.1 Detailed Description

Definition at line 62 of file IXMdatum\_array.f90.

#### 6.141.2 Member Function Documentation

**6.141.2.1** IXMdatum\_array::IXFpower\_Datum\_array::ts\_Power\_datum\_array  
( )

**6.141.2.2** IXMdatum\_array::IXFpower\_Datum\_array::tt\_Power\_datum\_array  
( )

**6.141.2.3** IXMdatum\_array::IXFpower\_Datum\_array::st\_Power\_datum\_array  
( )

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.142 m\_mrgrnk::IXFrank Interface Reference

### Public Member Functions

- subroutine `D_mrgrnk` (`XDONT`, `IRNGT`)
- subroutine `R_mrgrnk` (`XDONT`, `IRNGT`)
- subroutine `I_mrgrnk` (`XDONT`, `IRNGT`)
- `d_valmed`
- `r_valmed`
- `i_valmed`

### 6.142.1 Detailed Description

Definition at line 1216 of file `IXMsort.f90`.

### 6.142.2 Member Function Documentation

**6.142.2.1** subroutine `m_mrgrnk::IXFrank::D_mrgrnk` (`Real` (`kind=kdp`),`dimension` (:),`intent(in)` `XDONT`, `Integer`,`dimension` (:),`intent(out)` `IRNGT`)

Definition at line 1219 of file `IXMsort.f90`.

**6.142.2.2** subroutine `m_mrgrnk::IXFrank::R_mrgrnk` (`Real`,`dimension` (:),`intent(in)` `XDONT`, `Integer`,`dimension` (:),`intent(out)` `IRNGT`)

Definition at line 1419 of file `IXMsort.f90`.

**6.142.2.3** subroutine `m_mrgrnk::IXFrank::I_mrgrnk` (`Integer`,`dimension` (:),`intent(in)` `XDONT`, `Integer`,`dimension` (:),`intent(out)` `IRNGT`)

Definition at line 1618 of file `IXMsort.f90`.

**6.142.2.4** `m_mrgrnk::IXFrank::d_valmed` ()

**6.142.2.5** `m_mrgrnk::IXFrank::r_valmed` ()

**6.142.2.6** `m_mrgrnk::IXFrank::i_valmed` ()

The documentation for this interface was generated from the following files:

- `libcore/IXMsort.f90`

## 6.143 IXMgroups::IXFremove\_groups Interface Reference

### Public Member Functions

- subroutine `remove_byname` (`groups`, `name`, `status`)
- subroutine `remove_byid` (`groups`, `id`, `status`)

#### 6.143.1 Detailed Description

Definition at line 53 of file `IXMgroups.f90`.

#### 6.143.2 Member Function Documentation

**6.143.2.1** subroutine `IXMgroups::IXFremove_groups::remove_byname`  
(`type(IXTgroups)`,`intent(inout)` *groups*, `character(len=*)`,`intent(in)`  
*name*, `type(IXTstatus)` *status*)

Definition at line 263 of file `IXMgroups.f90`.

**6.143.2.2** subroutine `IXMgroups::IXFremove_groups::remove_byid`  
(`type(IXTgroups)`,`intent(inout)` *groups*, `integer`,`intent(in)` *id*,  
`type(IXTstatus)` *status*)

Definition at line 246 of file `IXMgroups.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMgroups.f90`

## 6.144 IXMstatus::IXFreport\_status Interface Reference

### Public Member Functions

- subroutine `report_local_status` (`status`)
- subroutine `report_global_status` ()

#### 6.144.1 Detailed Description

Definition at line 105 of file `IXMstatus.f90`.

#### 6.144.2 Member Function Documentation

##### 6.144.2.1 subroutine `IXMstatus::IXFreport_status::report_local_status` (`type(IXTstatus),intent(inout) status`)

Definition at line 198 of file `IXMstatus.f90`.

##### 6.144.2.2 subroutine `IXMstatus::IXFreport_status::report_global_status` ()

Definition at line 214 of file `IXMstatus.f90`.

The documentation for this interface was generated from the following file:

- `libcore/IXMstatus.f90`

## 6.145 IXMbase::IXFset\_integer\_array Interface Reference

### Public Member Functions

- subroutine `seti_1d` (`arr_out`, `status`, `arr_in`)
- subroutine `seti_2d` (`arr_out`, `status`, `arr_in`)

### 6.145.1 Detailed Description

Definition at line 47 of file IXMbase.f90.

### 6.145.2 Member Function Documentation

**6.145.2.1** subroutine `IXMbase::IXFset_integer_array::seti_1d`  
(`integer(i4b)`,`dimension(:)`,`pointer arr_out`, `type(IXTstatus) status`,  
`integer(i4b)`,`dimension(:)`,`optional arr_in`)

Definition at line 240 of file IXMbase.f90.

**6.145.2.2** subroutine `IXMbase::IXFset_integer_array::seti_2d`  
(`integer(i4b)`,`dimension(:,:)`,`pointer arr_out`, `type(IXTstatus) status`,  
`integer(i4b)`,`dimension(:,:)`,`optional arr_in`)

Definition at line 262 of file IXMbase.f90.

The documentation for this interface was generated from the following file:

- `libclasses/IXMbase.f90`

## 6.146 IXMbase::IXFset\_real\_array Interface Reference

### Public Member Functions

- subroutine `setr_1d` (`arr_out`, `status`, `arr_in`)
- subroutine `setr_2d` (`arr_out`, `status`, `arr_in`)

### 6.146.1 Detailed Description

Definition at line 43 of file `IXMbase.f90`.

### 6.146.2 Member Function Documentation

**6.146.2.1** subroutine `IXMbase::IXFset_real_array::setr_1d`  
(`real(dp)`,`dimension(:)`,`pointer arr_out`, `type(IXTstatus)` `status`,  
`real(dp)`,`dimension(:)`,`optional arr_in`)

Definition at line 251 of file `IXMbase.f90`.

**6.146.2.2** subroutine `IXMbase::IXFset_real_array::setr_2d`  
(`real(dp)`,`dimension(:,:)`,`pointer arr_out`, `type(IXTstatus)` `status`,  
`real(dp)`,`dimension(:,:)`,`optional arr_in`)

Definition at line 273 of file `IXMbase.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMbase.f90`



## 6.147 IXMorientation::IXFsetgen\_ orientation Interface Reference

### Public Member Functions

- subroutine `IXFset_rotvec_orientation` (`self`, `status`, `rotvec`)

#### 6.147.1 Detailed Description

Definition at line 64 of file `IXMorientation.f90`.

#### 6.147.2 Member Function Documentation

- 6.147.2.1** subroutine `IXMorientation::IXFsetgen_orientation::IXFset_rotvec_orientation` (`type(IXTorientation)`,`intent(inout)` *self*, `type(IXTstatus)` *status*, `real(dp)`,`dimension(3)` ,`intent(in)` *rotvec*)

Definition at line 196 of file `IXMorientation.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMorientation.f90`

## 6.148 IXMdatum\_array::IXFsin Interface Reference

### Public Member Functions

- `IXFsin_datum_array`

### 6.148.1 Detailed Description

Definition at line 77 of file `IXMdatum_array.f90`.

### 6.148.2 Member Function Documentation

#### 6.148.2.1 `IXMdatum_array::IXFsin::IXFsin_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.149 IXMdataset\_1d::IXFsin Interface Reference

### Public Member Functions

- `IXFsin_dataset_1d`

#### 6.149.1 Detailed Description

Definition at line 176 of file `IXMdataset_1d.f90`.

#### 6.149.2 Member Function Documentation

##### 6.149.2.1 `IXMdataset_1d::IXFsin::IXFsin_dataset_1d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.150 IXMdataset\_2d::IXFsin Interface Reference

### Public Member Functions

- `IXFsin_dataset_2d`

#### 6.150.1 Detailed Description

Definition at line 252 of file `IXMdataset_2d.f90`.

#### 6.150.2 Member Function Documentation

##### 6.150.2.1 `IXMdataset_2d::IXFsin::IXFsin_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.151 IXMdatum::IXFsin Interface Reference

### Public Member Functions

- `IXFsin_datum`

#### 6.151.1 Detailed Description

Definition at line 76 of file `IXMdatum.f90`.

#### 6.151.2 Member Function Documentation

##### 6.151.2.1 `IXMdatum::IXFsin::IXFsin_datum ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum.f90`

## 6.152 IXMdatum\_array::IXFsinh Interface Reference

### Public Member Functions

- `IXFsinh_datum_array`

#### 6.152.1 Detailed Description

Definition at line 89 of file `IXMdatum_array.f90`.

#### 6.152.2 Member Function Documentation

##### 6.152.2.1 `IXMdatum_array::IXFsinh::IXFsinh_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.153 IXMdataset\_1d::IXFsinh Interface Reference

### Public Member Functions

- `IXFsinh_dataset_1d`

#### 6.153.1 Detailed Description

Definition at line 188 of file `IXMdataset_1d.f90`.

#### 6.153.2 Member Function Documentation

##### 6.153.2.1 `IXMdataset_1d::IXFsinh::IXFsinh_dataset_1d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.154 IXMdataset\_2d::IXFsinh Interface Reference

### Public Member Functions

- `IXFsinh_dataset_2d`

#### 6.154.1 Detailed Description

Definition at line 264 of file `IXMdataset_2d.f90`.

#### 6.154.2 Member Function Documentation

##### 6.154.2.1 `IXMdataset_2d::IXFsinh::IXFsinh_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`



## 6.155 IXMdatum::IXFsinh Interface Reference

### Public Member Functions

- `IXFsinh_datum`

#### 6.155.1 Detailed Description

Definition at line 88 of file `IXMdatum.f90`.

#### 6.155.2 Member Function Documentation

##### 6.155.2.1 `IXMdatum::IXFsinh::IXFsinh_datum ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum.f90`

## 6.156 IXMinput\_source::IXFsize Interface Reference

### Public Member Functions

- subroutine `size_i` (`handle`, `item_name`, `item_size`, `status`)
- subroutine `size_i_array` (`handle`, `item_name`, `item_size`, `status`)

#### 6.156.1 Detailed Description

Definition at line 34 of file `IXMinput_source.f90`.

#### 6.156.2 Member Function Documentation

**6.156.2.1** subroutine `IXMinput_source::IXFsize::size_i` (`type(IXTinput_source)` *handle*, `character(len=*)` *item\_name*, `integer` *item\_size*, `type(IXTstatus)`, `target` *status*)

Definition at line 113 of file `IXMinput_source.f90`.

**6.156.2.2** subroutine `IXMinput_source::IXFsize::size_i_array` (`type(IXTinput_source)` *handle*, `character(len=*)` *item\_name*, `integer,dimension(:)` *item\_size*, `type(IXTstatus)`, `target` *status*)

Definition at line 102 of file `IXMinput_source.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMinput_source.f90`

## 6.157 IXMisis\_raw\_file::IXFsize\_raw Interface Reference

### Public Member Functions

- subroutine `IXFsize_raw_i` (`handle`, `item_name`, `item_size`, `status`)
- subroutine `IXFsize_raw_i_array` (`handle`, `item_name`, `item_size`, `status`)

### 6.157.1 Detailed Description

Definition at line 26 of file `IXMisis_raw_file.f90`.

### 6.157.2 Member Function Documentation

**6.157.2.1** subroutine `IXMisis_raw_file::IXFsize_raw::IXFsize_raw_i`  
(`type(IXTisis_raw_file)` *handle*, `character(len=*)` *item\_name*, `integer` *item\_size*, `type(IXTstatus)`, `target status`)

Definition at line 185 of file `IXMisis_raw_file.f90`.

**6.157.2.2** subroutine `IXMisis_raw_file::IXFsize_raw::IXFsize_raw_i_array`  
(`type(IXTisis_raw_file)` *handle*, `character(len=*)` *item\_name*, `integer,dimension(:)` *item\_size*, `type(IXTstatus)`, `target status`)

Definition at line 166 of file `IXMisis_raw_file.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMisis_raw_file.f90`

## 6.158 IXMshape::IXFsolid\_angle Interface Reference

### 6.158.1 Detailed Description

Definition at line 48 of file IXMshape.f90.

The documentation for this interface was generated from the following file:

- `libclasses/IXMshape.f90`

## 6.159 IXMgeometry::IXFsolid\_angle Interface Reference

### 6.159.1 Detailed Description

Definition at line 53 of file IXMgeometry.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMgeometry.f90

## 6.160 `m_refsort::IXFsort` Interface Reference

### Public Member Functions

- `d_refsort`
- `r_refsort`
- `i_refsort`

#### 6.160.1 Detailed Description

Definition at line 35 of file `IXMsort.f90`.

#### 6.160.2 Member Function Documentation

**6.160.2.1** `m_refsort::IXFsort::d_refsort ()`

**6.160.2.2** `m_refsort::IXFsort::r_refsort ()`

**6.160.2.3** `m_refsort::IXFsort::i_refsort ()`

The documentation for this interface was generated from the following files:

- `libcore/IXMsort.f90`

## 6.161 IXMdataset\_1d::IXFtan Interface Reference

### Public Member Functions

- `IXFtan_dataset_1d`

#### 6.161.1 Detailed Description

Definition at line 184 of file `IXMdataset_1d.f90`.

#### 6.161.2 Member Function Documentation

##### 6.161.2.1 `IXMdataset_1d::IXFtan::IXFtan_dataset_1d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.162 IXMdataset\_2d::IXFtan Interface Reference

### Public Member Functions

- `IXFtan_dataset_2d`

### 6.162.1 Detailed Description

Definition at line 260 of file `IXMdataset_2d.f90`.

### 6.162.2 Member Function Documentation

#### 6.162.2.1 `IXMdataset_2d::IXFtan::IXFtan_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`



## 6.163 IXMdatum\_array::IXFtan Interface Reference

### Public Member Functions

- IXFtan\_datum\_array

#### 6.163.1 Detailed Description

Definition at line 85 of file IXMdatum\_array.f90.

#### 6.163.2 Member Function Documentation

##### 6.163.2.1 IXMdatum\_array::IXFtan::IXFtan\_datum\_array ()

The documentation for this interface was generated from the following files:

- libclasses/IXMdatum\_array.f90

## 6.164 IXMdatum::IXFtan Interface Reference

### Public Member Functions

- `IXFtan_datum`

#### 6.164.1 Detailed Description

Definition at line 84 of file `IXMdatum.f90`.

#### 6.164.2 Member Function Documentation

##### 6.164.2.1 `IXMdatum::IXFtan::IXFtan_datum ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum.f90`

## 6.165 IXMdatum\_array::IXFtanh Interface Reference

### Public Member Functions

- `IXFtanh_datum_array`

#### 6.165.1 Detailed Description

Definition at line 97 of file `IXMdatum_array.f90`.

#### 6.165.2 Member Function Documentation

##### 6.165.2.1 IXMdatum\_array::IXFtanh::IXFtanh\_datum\_array ()

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.166 IXMdataset\_1d::IXFtanh Interface Reference

### Public Member Functions

- `IXFtanh_dataset_1d`

#### 6.166.1 Detailed Description

Definition at line 196 of file `IXMdataset_1d.f90`.

#### 6.166.2 Member Function Documentation

##### 6.166.2.1 `IXMdataset_1d::IXFtanh::IXFtanh_dataset_1d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.167 IXMdataset\_2d::IXFtanh Interface Reference

### Public Member Functions

- `IXFtanh_dataset_2d`

#### 6.167.1 Detailed Description

Definition at line 272 of file `IXMdataset_2d.f90`.

#### 6.167.2 Member Function Documentation

##### 6.167.2.1 `IXMdataset_2d::IXFtanh::IXFtanh_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.168 IXMdatum::IXFtanh Interface Reference

### Public Member Functions

- `IXFtanh_datum`

### 6.168.1 Detailed Description

Definition at line 96 of file `IXMdatum.f90`.

### 6.168.2 Member Function Documentation

#### 6.168.2.1 `IXMdatum::IXFtanh::IXFtanh_datum ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum.f90`

## 6.169 IXMdataset\_1d::IXFtimes Interface Reference

### Public Member Functions

- `ta_times_dataset_1d`
- `at_times_dataset_1d`
- `ts_times_dataset_1d`
- `tt_times_dataset_1d`
- `st_times_dataset_1d`

### 6.169.1 Detailed Description

Definition at line 117 of file IXMdataset\_1d.f90.

### 6.169.2 Member Function Documentation

**6.169.2.1** `IXMdataset_1d::IXFtimes::ta_times_dataset_1d ()`

**6.169.2.2** `IXMdataset_1d::IXFtimes::at_times_dataset_1d ()`

**6.169.2.3** `IXMdataset_1d::IXFtimes::ts_times_dataset_1d ()`

**6.169.2.4** `IXMdataset_1d::IXFtimes::tt_times_dataset_1d ()`

**6.169.2.5** `IXMdataset_1d::IXFtimes::st_times_dataset_1d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.170 IXMdataset\_2d::IXFtimes Interface Reference

### Public Member Functions

- `t_at_times_dataset_2d`
- `at_t_times_dataset_2d`
- `at_times_dataset_2d`
- `ta_times_dataset_2d`
- `ts_times_dataset_2d`
- `tt_times_dataset_2d`
- `st_times_dataset_2d`

### 6.170.1 Detailed Description

Definition at line 136 of file `IXMdataset_2d.f90`.

### 6.170.2 Member Function Documentation

**6.170.2.1** `IXMdataset_2d::IXFtimes::t_at_times_dataset_2d ()`

**6.170.2.2** `IXMdataset_2d::IXFtimes::at_t_times_dataset_2d ()`

**6.170.2.3** `IXMdataset_2d::IXFtimes::at_times_dataset_2d ()`

**6.170.2.4** `IXMdataset_2d::IXFtimes::ta_times_dataset_2d ()`

**6.170.2.5** `IXMdataset_2d::IXFtimes::ts_times_dataset_2d ()`

**6.170.2.6** `IXMdataset_2d::IXFtimes::tt_times_dataset_2d ()`

**6.170.2.7** `IXMdataset_2d::IXFtimes::st_times_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`



## 6.171 IXMdatum::IXFtimes Interface Reference

### Public Member Functions

- subroutine `datumTimesWS` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumTimesWW` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumTimesSW` (`wres`, `arg1`, `arg2`, `status`)

#### 6.171.1 Detailed Description

Definition at line 50 of file `IXMdatum.f90`.

#### 6.171.2 Member Function Documentation

**6.171.2.1** subroutine `IXMdatum::IXFtimes::datumTimesWS` (`type(IXTdatum)` `wres`, `type(IXTdatum)` `arg1`, `real(dp)` `arg2`, `type(IXTstatus)` `status`)

Definition at line 271 of file `IXMdatum.f90`.

**6.171.2.2** subroutine `IXMdatum::IXFtimes::datumTimesWW` (`type(IXTdatum)` `wres`, `type(IXTdatum)` `arg1`, `type(IXTdatum)` `arg2`, `type(IXTstatus)` `status`)

Definition at line 256 of file `IXMdatum.f90`.

**6.171.2.3** subroutine `IXMdatum::IXFtimes::datumTimesSW` (`type(IXTdatum)` `wres`, `real(dp)` `arg1`, `type(IXTdatum)` `arg2`, `type(IXTstatus)` `status`)

Definition at line 282 of file `IXMdatum.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdatum.f90`

## 6.172 IXMdatum\_array::IXFtimes Interface Reference

### Public Member Functions

- `ts_Times_datum_array`
- `tt_Times_datum_array`
- `st_Times_datum_array`

### 6.172.1 Detailed Description

Definition at line 51 of file `IXMdatum_array.f90`.

### 6.172.2 Member Function Documentation

**6.172.2.1** `IXMdatum_array::IXFtimes::ts_Times_datum_array ()`

**6.172.2.2** `IXMdatum_array::IXFtimes::tt_Times_datum_array ()`

**6.172.2.3** `IXMdatum_array::IXFtimes::st_Times_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.173 IXMdataset\_1d::IXFtimes\_dataset\_1d Interface Reference

### Public Member Functions

- `ta_times_dataset_1d`
- `at_times_dataset_1d`
- `ts_times_dataset_1d`
- `tt_times_dataset_1d`
- `st_times_dataset_1d`

### 6.173.1 Detailed Description

Definition at line 113 of file IXMdataset\_1d.f90.

### 6.173.2 Member Function Documentation

**6.173.2.1** IXMdataset\_1d::IXFtimes\_dataset\_1d::ta\_times\_dataset\_1d ()

**6.173.2.2** IXMdataset\_1d::IXFtimes\_dataset\_1d::at\_times\_dataset\_1d ()

**6.173.2.3** IXMdataset\_1d::IXFtimes\_dataset\_1d::ts\_times\_dataset\_1d ()

**6.173.2.4** IXMdataset\_1d::IXFtimes\_dataset\_1d::tt\_times\_dataset\_1d ()

**6.173.2.5** IXMdataset\_1d::IXFtimes\_dataset\_1d::st\_times\_dataset\_1d ()

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_1d.f90`

## 6.174 IXMdataset\_2d::IXFtimes\_dataset\_2d Interface Reference

### Public Member Functions

- `t_at_times_dataset_2d`
- `at_t_times_dataset_2d`
- `at_times_dataset_2d`
- `ta_times_dataset_2d`
- `ts_times_dataset_2d`
- `tt_times_dataset_2d`
- `st_times_dataset_2d`

### 6.174.1 Detailed Description

Definition at line 131 of file `IXMdataset_2d.f90`.

### 6.174.2 Member Function Documentation

**6.174.2.1** `IXMdataset_2d::IXFtimes_dataset_2d::t_at_times_dataset_2d ()`

**6.174.2.2** `IXMdataset_2d::IXFtimes_dataset_2d::at_t_times_dataset_2d ()`

**6.174.2.3** `IXMdataset_2d::IXFtimes_dataset_2d::at_times_dataset_2d ()`

**6.174.2.4** `IXMdataset_2d::IXFtimes_dataset_2d::ta_times_dataset_2d ()`

**6.174.2.5** `IXMdataset_2d::IXFtimes_dataset_2d::ts_times_dataset_2d ()`

**6.174.2.6** `IXMdataset_2d::IXFtimes_dataset_2d::tt_times_dataset_2d ()`

**6.174.2.7** `IXMdataset_2d::IXFtimes_dataset_2d::st_times_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.175 IXMdatum::IXFtimes \_Datum Interface Reference

### Public Member Functions

- subroutine `datumTimesWS` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumTimesWW` (`wres`, `arg1`, `arg2`, `status`)
- subroutine `datumTimesSW` (`wres`, `arg1`, `arg2`, `status`)

### 6.175.1 Detailed Description

Definition at line 47 of file `IXMdatum.f90`.

### 6.175.2 Member Function Documentation

**6.175.2.1** subroutine `IXMdatum::IXFtimes _Datum::datumTimesWS`  
(`type(IXTdatum)` `wres`, `type(IXTdatum)` `arg1`, `real(dp)` `arg2`,  
`type(IXTstatus)` `status`)

Definition at line 271 of file `IXMdatum.f90`.

**6.175.2.2** subroutine `IXMdatum::IXFtimes _Datum::datumTimesWW`  
(`type(IXTdatum)` `wres`, `type(IXTdatum)` `arg1`, `type(IXTdatum)` `arg2`,  
`type(IXTstatus)` `status`)

Definition at line 256 of file `IXMdatum.f90`.

**6.175.2.3** subroutine `IXMdatum::IXFtimes _Datum::datumTimesSW`  
(`type(IXTdatum)` `wres`, `real(dp)` `arg1`, `type(IXTdatum)` `arg2`,  
`type(IXTstatus)` `status`)

Definition at line 282 of file `IXMdatum.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdatum.f90`

## 6.176 IXMdatum\_array::IXFtimes\_Datum\_array Interface Reference

### Public Member Functions

- `ts_Times_datum_array`
- `tt_Times_datum_array`
- `st_Times_datum_array`

### 6.176.1 Detailed Description

Definition at line 48 of file `IXMdatum_array.f90`.

### 6.176.2 Member Function Documentation

**6.176.2.1** `IXMdatum_array::IXFtimes_Datum_array::ts_Times_datum_array ()`

**6.176.2.2** `IXMdatum_array::IXFtimes_Datum_array::tt_Times_datum_array ()`

**6.176.2.3** `IXMdatum_array::IXFtimes_Datum_array::st_Times_datum_array ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdatum_array.f90`

## 6.177 IXMdataset\_2d::IXFtimes\_X Interface Reference

### Public Member Functions

- IXFarray\_X\_times\_dataset\_2d
- IXFdataset\_1d\_X\_times\_dataset\_2d

### 6.177.1 Detailed Description

Definition at line 206 of file IXMdataset\_2d.f90.

### 6.177.2 Member Function Documentation

**6.177.2.1** IXMdataset\_2d::IXFtimes\_X::IXFarray\_X\_times\_dataset\_2d ()

**6.177.2.2** IXMdataset\_2d::IXFtimes\_X::IXFdataset\_1d\_X\_times\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- libclasses/IXMdataset\_2d.f90

## 6.178 IXMdataset\_2d::IXFtimes\_X\_dataset\_2d Interface Reference

### Public Member Functions

- [IXFarray\\_X\\_times\\_dataset\\_2d](#)
- [IXFdataset\\_1d\\_X\\_times\\_dataset\\_2d](#)

### 6.178.1 Detailed Description

Definition at line 203 of file IXMdataset\_2d.f90.

### 6.178.2 Member Function Documentation

**6.178.2.1** [IXMdataset\\_2d::IXFtimes\\_X\\_dataset\\_2d::IXFarray\\_X\\_times\\_dataset\\_2d \(\)](#)

**6.178.2.2** [IXMdataset\\_2d::IXFtimes\\_X\\_dataset\\_2d::IXFdataset\\_1d\\_X\\_times\\_dataset\\_2d \(\)](#)

The documentation for this interface was generated from the following files:

- [libclasses/IXMdataset\\_2d.f90](#)



## 6.179 IXMdataset\_2d::IXFtimes\_Y Interface Reference

### Public Member Functions

- IXFarray\_Y\_times\_dataset\_2d
- IXFdataset\_1d\_Y\_times\_dataset\_2d

### 6.179.1 Detailed Description

Definition at line 233 of file IXMdataset\_2d.f90.

### 6.179.2 Member Function Documentation

**6.179.2.1** IXMdataset\_2d::IXFtimes\_Y::IXFarray\_Y\_times\_dataset\_2d ()

**6.179.2.2** IXMdataset\_2d::IXFtimes\_Y::IXFdataset\_1d\_Y\_times\_dataset\_2d ()

The documentation for this interface was generated from the following files:

- libclasses/IXMdataset\_2d.f90

## 6.180 IXMdataset\_2d::IXFtimes\_Y\_dataset\_2d Interface Reference

### Public Member Functions

- `IXFarray_Y_times_dataset_2d`
- `IXFdataset_1d_Y_times_dataset_2d`

### 6.180.1 Detailed Description

Definition at line 230 of file `IXMdataset_2d.f90`.

### 6.180.2 Member Function Documentation

**6.180.2.1** `IXMdataset_2d::IXFtimes_Y_dataset_2d::IXFarray_Y_times_dataset_2d ()`

**6.180.2.2** `IXMdataset_2d::IXFtimes_Y_dataset_2d::IXFdataset_1d_Y_times_dataset_2d ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMdataset_2d.f90`

## 6.181 IXMfermi\_chopper::IXFtransmission\_fermi\_chopper Interface Reference

### 6.181.1 Detailed Description

Definition at line 41 of file IXMfermi\_chopper.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMfermi\_chopper.f90

## 6.182 IXMfermi\_chopper::IXFtransmission\_odd\_fermi\_chopper Interface Reference

### 6.182.1 Detailed Description

Definition at line 46 of file IXMfermi\_chopper.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMfermi\_chopper.f90

## 6.183 m\_unirnk::IXFunique\_rank Interface Reference

### Public Member Functions

- Real **R\_nearless** (*XVAL*)
- Integer **I\_nearless** (*XVAL*)

### 6.183.1 Detailed Description

Definition at line 437 of file IXMsort.f90.

### 6.183.2 Member Function Documentation

#### 6.183.2.1 Real m\_unirnk::IXFunique\_rank::R\_nearless (Real,intent(in) *XVAL*)

Definition at line 1185 of file IXMsort.f90.

#### 6.183.2.2 Integer m\_unirnk::IXFunique\_rank::I\_nearless (Integer,intent(in) *XVAL*)

Definition at line 1195 of file IXMsort.f90.

The documentation for this interface was generated from the following file:

- libcore/**IXMsort.f90**

## 6.184 IXMdataset\_2d::IXFunits Interface Reference

### Public Member Functions

- subroutine `units_single_array` (`d2d`, `arrayd2d`, `status`, `emode`, `efixed`, `L1`, `L2`, `theta`, `delay`, `units_out`)
- subroutine `units_array_array` (`d2d_in`, `d2d_out`, `status`, `emode`, `efixed`, `L1`, `L2`, `theta`, `delay`, `units_out`)
- subroutine `units_array` (`arrayd2d`, `status`, `emode`, `efixed`, `L1`, `L2`, `theta`, `delay`, `units_out`)

#### 6.184.1 Detailed Description

Definition at line 281 of file `IXMdataset_2d.f90`.

#### 6.184.2 Member Function Documentation

**6.184.2.1** subroutine `IXMdataset_2d::IXFunits::units_single_array`  
 (`type(IXTdataset_2d)`,`intent(inout) d2d`, `type(IXTdataset_2d)`,`dimension(:),allocatable arrayd2d`, `type(IXTstatus)`,`intent(inout) status`, `integer(i4b)`,`intent(in) emode`, `real(dp)`,`intent(in) efixed`, `real(dp)`,`intent(in) L1`, `real(dp)`,`dimension(:),intent(in) L2`, `real(dp)`,`dimension(:),intent(in) theta`, `real(dp)`,`dimension(:),intent(in) delay`, `type(IXTunits)`,`intent(in) units_out`)

Definition at line 1950 of file `IXMdataset_2d.f90`.

**6.184.2.2** subroutine `IXMdataset_2d::IXFunits::units_array_array`  
 (`type(IXTdataset_2d)`,`dimension(:),intent(in),allocatable d2d_in`, `type(IXTdataset_2d)`,`dimension(:),allocatable d2d_out`, `type(IXTstatus)`,`intent(inout) status`, `integer(i4b)`,`intent(in) emode`, `real(dp)`,`intent(in) efixed`, `real(dp)`,`intent(in) L1`, `real(dp)`,`dimension(:),intent(in) L2`, `real(dp)`,`dimension(:),intent(in) theta`, `real(dp)`,`dimension(:),intent(in) delay`, `type(IXTunits)`,`intent(in) units_out`)

Definition at line 1999 of file `IXMdataset_2d.f90`.

**6.184.2.3** subroutine `IXMdataset_2d::IXFunits::units_array`  
 (`type(IXTdataset_2d)`,`dimension(:),intent(inout),allocatable arrayd2d`, `type(IXTstatus)`,`intent(inout) status`, `integer(i4b)`,`intent(in) emode`, `real(dp)`,`intent(in) efixed`, `real(dp)`,`intent(in) L1`, `real(dp)`,`dimension(:),intent(in) L2`, `real(dp)`,`dimension(:),intent(in) theta`, `real(dp)`,`dimension(:),intent(in) delay`, `type(IXTunits)`,`intent(in) units_out`)

Definition at line 2088 of file `IXMdataset_2d.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdataset_2d.f90`

## 6.185 IXMdataset\_2d::IXFunits\_dataset\_2d Interface Reference

### Public Member Functions

- subroutine `units_single_array` (`d2d`, `arrayd2d`, `status`, `emode`, `efixed`, `L1`, `L2`, `theta`, `delay`, `units_out`)
- subroutine `units_array_array` (`d2d_in`, `d2d_out`, `status`, `emode`, `efixed`, `L1`, `L2`, `theta`, `delay`, `units_out`)
- subroutine `units_array` (`arrayd2d`, `status`, `emode`, `efixed`, `L1`, `L2`, `theta`, `delay`, `units_out`)

### 6.185.1 Detailed Description

Definition at line 277 of file `IXMdataset_2d.f90`.

### 6.185.2 Member Function Documentation

**6.185.2.1** subroutine `IXMdataset_2d::IXFunits_dataset_2d::units_single_array` (`type(IXTdataset_2d)`,`intent(inout) d2d`, `type(IXTdataset_2d)`,`dimension(:),allocatable arrayd2d`, `type(IXTstatus)`,`intent(inout) status`, `integer(i4b)`,`intent(in) emode`, `real(dp)`,`intent(in) efixed`, `real(dp)`,`intent(in) L1`, `real(dp)`,`dimension(:),intent(in) L2`, `real(dp)`,`dimension(:),intent(in) theta`, `real(dp)`,`dimension(:),intent(in) delay`, `type(IXTunits)`,`intent(in) units_out`)

Definition at line 1950 of file `IXMdataset_2d.f90`.

**6.185.2.2** subroutine `IXMdataset_2d::IXFunits_dataset_2d::units_array_array` (`type(IXTdataset_2d)`,`dimension(:),intent(in),allocatable d2d_in`, `type(IXTdataset_2d)`,`dimension(:),allocatable d2d_out`, `type(IXTstatus)`,`intent(inout) status`, `integer(i4b)`,`intent(in) emode`, `real(dp)`,`intent(in) efixed`, `real(dp)`,`intent(in) L1`, `real(dp)`,`dimension(:),intent(in) L2`, `real(dp)`,`dimension(:),intent(in) theta`, `real(dp)`,`dimension(:),intent(in) delay`, `type(IXTunits)`,`intent(in) units_out`)

Definition at line 1999 of file `IXMdataset_2d.f90`.

**6.185.2.3** subroutine `IXMdataset_2d::IXFunits_dataset_2d::units_array` (`type(IXTdataset_2d)`,`dimension(:),intent(inout),allocatable arrayd2d`, `type(IXTstatus)`,`intent(inout) status`, `integer(i4b)`,`intent(in) emode`, `real(dp)`,`intent(in) efixed`, `real(dp)`,`intent(in) L1`, `real(dp)`,`dimension(:),intent(in) L2`, `real(dp)`,`dimension(:),intent(in) theta`, `real(dp)`,`dimension(:),intent(in) delay`, `type(IXTunits)`,`intent(in) units_out`)

Definition at line 2088 of file `IXMdataset_2d.f90`.

The documentation for this interface was generated from the following file:

- libclasses/IXMdataset\_\_2d.f90



## 6.186 IXMrunfile::IXFunits\_runfile Interface Reference

### Public Member Functions

- subroutine `units_runfile` (`runfile`, `status`, `units_out`)
- subroutine `units_rebinXdesc_runfile` (`runfile`, `status`, `units_out`, `Xdesc`)
- subroutine `units_rebinXref_runfile` (`runfile`, `status`, `units_out`, `Xref`)

### 6.186.1 Detailed Description

Definition at line 48 of file `IXMrunfile.f90`.

### 6.186.2 Member Function Documentation

**6.186.2.1** subroutine `IXMrunfile::IXFunits_runfile::units_runfile` (`type(IXTrunfile)` *runfile*, `type(IXTstatus)` *status*, `type(IXTunits)`, `intent(in)` *units\_out*)

Definition at line 427 of file `IXMrunfile.f90`.

**6.186.2.2** subroutine `IXMrunfile::IXFunits_runfile::units_rebinXdesc_runfile` (`type(IXTrunfile)` *runfile*, `type(IXTstatus)` *status*, `type(IXTunits)`, `intent(in)` *units\_out*, `real(dp)`, `dimension(:)`, `intent(in)` *Xdesc*)

Definition at line 441 of file `IXMrunfile.f90`.

**6.186.2.3** subroutine `IXMrunfile::IXFunits_runfile::units_rebinXref_runfile` (`type(IXTrunfile)` *runfile*, `type(IXTstatus)` *status*, `type(IXTunits)`, `intent(in)` *units\_out*, `type(IXTdataset_2d)` *Xref*)

Definition at line 456 of file `IXMrunfile.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMrunfile.f90`

## 6.187 IXMdataset\_1d::IXFunspike Interface Reference

### Public Member Functions

- subroutine `IXFunspike_dataset_1d` (`d1dout`, `d1d`, `status`)

#### 6.187.1 Detailed Description

Definition at line 200 of file `IXMdataset_1d.f90`.

#### 6.187.2 Member Function Documentation

**6.187.2.1** subroutine `IXMdataset_1d::IXFunspike_dataset_1d` (`type(IXTdataset_1d),intent(out) d1dout`, `type(IXTdataset_1d),intent(in) d1d`, `type(IXTstatus),intent(inout) status`)

Definition at line 1134 of file `IXMdataset_1d.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdataset_1d.f90`

## 6.188 IXMdataset\_2d::IXFunspike Interface Reference

### Public Member Functions

- subroutine `IXFunspike_dataset_2d` (`d2dout`, `d2d`, `status`)

#### 6.188.1 Detailed Description

Definition at line 285 of file `IXMdataset_2d.f90`.

#### 6.188.2 Member Function Documentation

- 6.188.2.1** subroutine `IXMdataset_2d::IXFunspike_dataset_2d` (`type(IXTdataset_2d)`,`intent(out) d2dout`,  
`type(IXTdataset_2d)`,`intent(in) d2d`, `type(IXTstatus)`,`intent(inout) status`)

Definition at line 2320 of file `IXMdataset_2d.f90`.

The documentation for this interface was generated from the following file:

- `libclasses/IXMdataset_2d.f90`

## 6.189 IXMwrapped\_var::IXFunwrap\_var Interface Reference

### Public Member Functions

- subroutine `unwrap_i` (`wrapped_var`, `var`, `status`)
- `unwrap_i1`
- `unwrap_i2`
- `unwrap_i3`
- `unwrap_i4`
- subroutine `unwrap_dp` (`wrapped_var`, `var`, `status`)
- `unwrap_dp1`
- `unwrap_dp2`
- `unwrap_dp3`
- `unwrap_dp4`
- subroutine `unwrap_char` (`wrapped_var`, `var`, `status`)
- `unwrap_char1`
- subroutine `unwrap_logval` (`wrapped_var`, `var`, `status`)
- subroutine `unwrap_object` (`wrapped_var`, `var`, `status`)

### 6.189.1 Detailed Description

Definition at line 65 of file `IXMwrappedvar.f90`.

### 6.189.2 Member Function Documentation

**6.189.2.1** subroutine `IXMwrapped_var::IXFunwrap_var::unwrap_i`  
 (`type(IXTwrapped_var) wrapped_var`, `integer(i4b) var`, `type(IXTstatus) status`)

Definition at line 174 of file `IXMwrappedvar.f90`.

**6.189.2.2** `IXMwrapped_var::IXFunwrap_var::unwrap_i1` ()

**6.189.2.3** `IXMwrapped_var::IXFunwrap_var::unwrap_i2` ()

**6.189.2.4** `IXMwrapped_var::IXFunwrap_var::unwrap_i3` ()

**6.189.2.5** `IXMwrapped_var::IXFunwrap_var::unwrap_i4` ()

**6.189.2.6** subroutine `IXMwrapped_var::IXFunwrap_var::unwrap_dp`  
 (`type(IXTwrapped_var) wrapped_var`, `real(dp) var`, `type(IXTstatus) status`)

Definition at line 187 of file `IXMwrappedvar.f90`.

6.189.2.7 IXMwrapped\_var::IXFunwrap\_var::unwrap\_dp1 ()

6.189.2.8 IXMwrapped\_var::IXFunwrap\_var::unwrap\_dp2 ()

6.189.2.9 IXMwrapped\_var::IXFunwrap\_var::unwrap\_dp3 ()

6.189.2.10 IXMwrapped\_var::IXFunwrap\_var::unwrap\_dp4 ()

6.189.2.11 subroutine IXMwrapped\_var::IXFunwrap\_var::unwrap\_char  
(type(IXTwrapped\_var) *wrapped\_var*, character(len=\*) *var*,  
type(IXTstatus) *status*)

Definition at line 200 of file IXMwrappedvar.f90.

6.189.2.12 IXMwrapped\_var::IXFunwrap\_var::unwrap\_char1 ()

6.189.2.13 subroutine IXMwrapped\_var::IXFunwrap\_var::unwrap\_logval  
(type(IXTwrapped\_var) *wrapped\_var*, logical *logical*, type(IXTstatus)  
*status*)

Definition at line 213 of file IXMwrappedvar.f90.

6.189.2.14 subroutine IXMwrapped\_var::IXFunwrap\_var::unwrap\_object  
(type(IXTwrapped\_var) *wrapped\_var*, type(IXTwrapped\_object) *var*,  
type(IXTstatus) *status*)

Definition at line 226 of file IXMwrappedvar.f90.

The documentation for this interface was generated from the following files:

- libclasses/IXMwrappedvar.f90

## 6.190 IXMwrapped\_var::IXFunwrap\_varAlloc Interface Reference

### Public Member Functions

- `unwrap_alloc_i1`
- `unwrap_alloc_i2`
- `unwrap_alloc_i3`
- `unwrap_alloc_i4`
- `unwrap_alloc_dp1`
- `unwrap_alloc_dp2`
- `unwrap_alloc_dp3`
- `unwrap_alloc_dp4`
- `unwrap_alloc_char1`

### 6.190.1 Detailed Description

Definition at line 71 of file `IXMwrappedvar.f90`.

### 6.190.2 Member Function Documentation

**6.190.2.1** `IXMwrapped_var::IXFunwrap_varAlloc::unwrap_alloc_i1 ()`

**6.190.2.2** `IXMwrapped_var::IXFunwrap_varAlloc::unwrap_alloc_i2 ()`

**6.190.2.3** `IXMwrapped_var::IXFunwrap_varAlloc::unwrap_alloc_i3 ()`

**6.190.2.4** `IXMwrapped_var::IXFunwrap_varAlloc::unwrap_alloc_i4 ()`

**6.190.2.5** `IXMwrapped_var::IXFunwrap_varAlloc::unwrap_alloc_dp1 ()`

**6.190.2.6** `IXMwrapped_var::IXFunwrap_varAlloc::unwrap_alloc_dp2 ()`

**6.190.2.7** `IXMwrapped_var::IXFunwrap_varAlloc::unwrap_alloc_dp3 ()`

**6.190.2.8** `IXMwrapped_var::IXFunwrap_varAlloc::unwrap_alloc_dp4 ()`

**6.190.2.9** `IXMwrapped_var::IXFunwrap_varAlloc::unwrap_alloc_char1 ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMwrappedvar.f90`

## 6.191 IXMwrapped\_var::IXFunwrap\_varPtr Interface Reference

### Public Member Functions

- `unwrap_ptr_i1`
- `unwrap_ptr_i2`
- `unwrap_ptr_i3`
- `unwrap_ptr_i4`
- `unwrap_ptr_dp1`
- `unwrap_ptr_dp2`
- `unwrap_ptr_dp3`
- `unwrap_ptr_dp4`
- `unwrap_ptr_char1`

#### 6.191.1 Detailed Description

Definition at line 76 of file IXMwrappedvar.f90.

#### 6.191.2 Member Function Documentation

**6.191.2.1** IXMwrapped\_var::IXFunwrap\_varPtr::unwrap\_ptr\_i1 ()

**6.191.2.2** IXMwrapped\_var::IXFunwrap\_varPtr::unwrap\_ptr\_i2 ()

**6.191.2.3** IXMwrapped\_var::IXFunwrap\_varPtr::unwrap\_ptr\_i3 ()

**6.191.2.4** IXMwrapped\_var::IXFunwrap\_varPtr::unwrap\_ptr\_i4 ()

**6.191.2.5** IXMwrapped\_var::IXFunwrap\_varPtr::unwrap\_ptr\_dp1 ()

**6.191.2.6** IXMwrapped\_var::IXFunwrap\_varPtr::unwrap\_ptr\_dp2 ()

**6.191.2.7** IXMwrapped\_var::IXFunwrap\_varPtr::unwrap\_ptr\_dp3 ()

**6.191.2.8** IXMwrapped\_var::IXFunwrap\_varPtr::unwrap\_ptr\_dp4 ()

**6.191.2.9** IXMwrapped\_var::IXFunwrap\_varPtr::unwrap\_ptr\_char1 ()

The documentation for this interface was generated from the following files:

- `libclasses/IXMwrappedvar.f90`

## 6.192 IXMindex::IXFupper\_index Interface Reference

### 6.192.1 Detailed Description

Definition at line 9 of file IXMindex.f90.

The documentation for this interface was generated from the following file:

- libcore/**IXMindex.f90**



## 6.193 IXMfermi\_chopper::IXFvariance\_fermi\_chopper Interface Reference

### 6.193.1 Detailed Description

Definition at line 51 of file IXMfermi\_chopper.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMfermi\_chopper.f90

## 6.194 IXMfermi\_chopper::IXFvariance\_odd\_fermi\_chopper Interface Reference

### 6.194.1 Detailed Description

Definition at line 56 of file IXMfermi\_chopper.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMfermi\_chopper.f90

## 6.195 IXMshape::IXFvolume Interface Reference

### 6.195.1 Detailed Description

Definition at line 44 of file IXMshape.f90.

The documentation for this interface was generated from the following file:

- `libclasses/IXMshape.f90`

## 6.196 IXMgeometry::IXFvolume Interface Reference

### 6.196.1 Detailed Description

Definition at line 49 of file IXMgeometry.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMgeometry.f90

## 6.197 IXMwrapped\_var::IXFwrap Interface Reference

### Public Member Functions

- `f_wrap_i1`
- `f_wrap_i2`
- `f_wrap_i3`
- `f_wrap_i4`
- `f_wrap_dp1`
- `f_wrap_dp2`
- `f_wrap_dp3`
- `f_wrap_dp4`
- `f_wrap_char1`

### 6.197.1 Detailed Description

Definition at line 59 of file `IXMwrappedvar.f90`.

### 6.197.2 Member Function Documentation

**6.197.2.1** `IXMwrapped_var::IXFwrap::f_wrap_i1 ()`

**6.197.2.2** `IXMwrapped_var::IXFwrap::f_wrap_i2 ()`

**6.197.2.3** `IXMwrapped_var::IXFwrap::f_wrap_i3 ()`

**6.197.2.4** `IXMwrapped_var::IXFwrap::f_wrap_i4 ()`

**6.197.2.5** `IXMwrapped_var::IXFwrap::f_wrap_dp1 ()`

**6.197.2.6** `IXMwrapped_var::IXFwrap::f_wrap_dp2 ()`

**6.197.2.7** `IXMwrapped_var::IXFwrap::f_wrap_dp3 ()`

**6.197.2.8** `IXMwrapped_var::IXFwrap::f_wrap_dp4 ()`

**6.197.2.9** `IXMwrapped_var::IXFwrap::f_wrap_char1 ()`

The documentation for this interface was generated from the following files:

- `libclasses/IXMwrappedvar.f90`

## 6.198 IXMwrapped\_var::IXFwrap\_var Interface Reference

### Public Member Functions

- subroutine `wrap_i` (`var`, `wrapped_var`, `status`)
- `wrap_i1`
- `wrap_i2`
- `wrap_i3`
- `wrap_i4`
- subroutine `wrap_dp` (`var`, `wrapped_var`, `status`)
- `wrap_dp1`
- `wrap_dp2`
- `wrap_dp3`
- `wrap_dp4`
- subroutine `wrap_char` (`var`, `wrapped_var`, `status`)
- `wrap_char1`
- subroutine `wrap_logval` (`var`, `wrapped_var`, `status`)
- subroutine `wrap_object` (`var`, `wrapped_var`, `status`)

### 6.198.1 Detailed Description

Definition at line 53 of file `IXMwrappedvar.f90`.

### 6.198.2 Member Function Documentation

**6.198.2.1** subroutine `IXMwrapped_var::IXFwrap_var::wrap_i`  
 (`integer(i4b)`,`intent(in) var`, `type(IXTwrapped_var) wrapped_var`,  
`type(IXTstatus) status`)

Definition at line 89 of file `IXMwrappedvar.f90`.

**6.198.2.2** `IXMwrapped_var::IXFwrap_var::wrap_i1` ()

**6.198.2.3** `IXMwrapped_var::IXFwrap_var::wrap_i2` ()

**6.198.2.4** `IXMwrapped_var::IXFwrap_var::wrap_i3` ()

**6.198.2.5** `IXMwrapped_var::IXFwrap_var::wrap_i4` ()

**6.198.2.6** subroutine `IXMwrapped_var::IXFwrap_var::wrap_dp`  
 (`real(dp)`,`intent(in) var`, `type(IXTwrapped_var) wrapped_var`,  
`type(IXTstatus) status`)

Definition at line 106 of file `IXMwrappedvar.f90`.

6.198.2.7 IXMwrapped\_var::IXFwrap\_var::wrap\_dp1 ()

6.198.2.8 IXMwrapped\_var::IXFwrap\_var::wrap\_dp2 ()

6.198.2.9 IXMwrapped\_var::IXFwrap\_var::wrap\_dp3 ()

6.198.2.10 IXMwrapped\_var::IXFwrap\_var::wrap\_dp4 ()

6.198.2.11 subroutine IXMwrapped\_var::IXFwrap\_var::wrap\_char  
(character(len=\*),intent(in) var, type(IXTwrapped\_var) wrapped\_var,  
type(IXTstatus) status)

Definition at line 123 of file IXMwrappedvar.f90.

6.198.2.12 IXMwrapped\_var::IXFwrap\_var::wrap\_char1 ()

6.198.2.13 subroutine IXMwrapped\_var::IXFwrap\_var::wrap\_logval  
(logical,intent(in) var, type(IXTwrapped\_var) wrapped\_var,  
type(IXTstatus) status)

Definition at line 140 of file IXMwrappedvar.f90.

6.198.2.14 subroutine IXMwrapped\_var::IXFwrap\_var::wrap\_object  
(type(IXTwrapped\_object),intent(in) var, type(IXTwrapped\_var)  
wrapped\_var, type(IXTstatus) status)

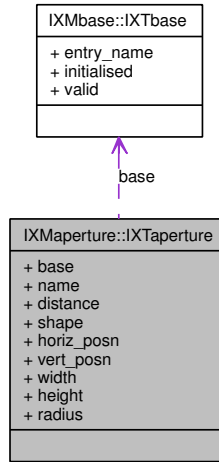
Definition at line 157 of file IXMwrappedvar.f90.

The documentation for this interface was generated from the following files:

- libclasses/IXMwrappedvar.f90

## 6.199 IXMaperture::IXTaperture Struct Reference

Collaboration diagram for IXMaperture::IXTaperture:



### Public Attributes

- `type(IXTbase) base`
- `character(len=long_len) name = 'name'`
- `real(dp) distance = 0.0_dp`
- `character(len=short_len) shape = 'shape'`
- `real(dp) horiz_posn = 0.0_dp`
- `real(dp) vert_posn = 0.0_dp`
- `real(dp) width = 0.0_dp`
- `real(dp) height = 0.0_dp`
- `real(dp) radius = 0.0_dp`

### 6.199.1 Detailed Description

Definition at line 22 of file IXMaperture.f90.

### 6.199.2 Member Data Documentation

#### 6.199.2.1 `type(IXTbase) IXMaperture::IXTaperture::base`

Definition at line 24 of file IXMaperture.f90.

#### 6.199.2.2 `character(len=long_len) IXMaperture::IXTaperture::name = 'name'`

Definition at line 25 of file IXMaperture.f90.

#### 6.199.2.3 `real(dp) IXMaperture::IXTaperture::distance = 0.0_dp`

Definition at line 26 of file IXMaperture.f90.



**6.199.2.4** `character(len=short_len) IXMaperture::IXTaperture::shape = 'shape'`

Definition at line 27 of file IXMaperture.f90.

**6.199.2.5** `real(dp) IXMaperture::IXTaperture::horiz_posn = 0.0_dp`

Definition at line 28 of file IXMaperture.f90.

**6.199.2.6** `real(dp) IXMaperture::IXTaperture::vert_posn = 0.0_dp`

Definition at line 29 of file IXMaperture.f90.

**6.199.2.7** `real(dp) IXMaperture::IXTaperture::width = 0.0_dp`

Definition at line 30 of file IXMaperture.f90.

**6.199.2.8** `real(dp) IXMaperture::IXTaperture::height = 0.0_dp`

Definition at line 31 of file IXMaperture.f90.

**6.199.2.9** `real(dp) IXMaperture::IXTaperture::radius = 0.0_dp`

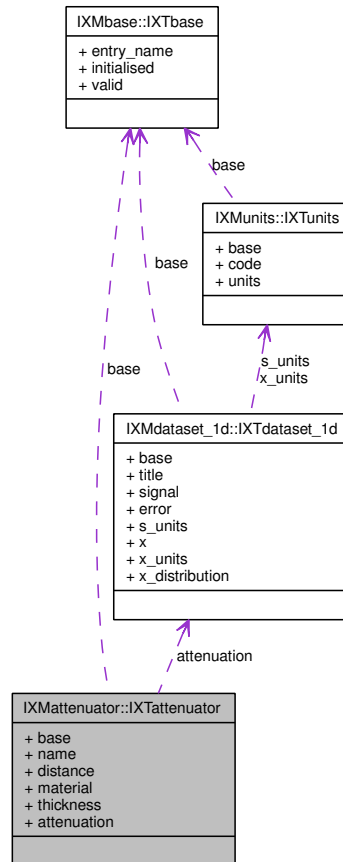
Definition at line 32 of file IXMaperture.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMaperture.f90`

## 6.200 IXMattenuator::IXTattenuator Struct Reference

Collaboration diagram for IXMattenuator::IXTattenuator:



### Public Attributes

- `type(IXTbase)` `base`
- `character(len=long_len)` `name = 'name'`
- `real(dp)` `distance = 0.0_dp`
- `character(len=long_len)` `material = 'material'`
- `real(dp)` `thickness = 0.0_dp`
- `type(IXTdataset_1d)` `attenuation`

### 6.200.1 Detailed Description

Definition at line 15 of file IXMattenuator.f90.

### 6.200.2 Member Data Documentation

#### 6.200.2.1 `type(IXTbase)` `IXMattenuator::IXTattenuator::base`

Definition at line 17 of file IXMattenuator.f90.

**6.200.2.2** `character(len=long_len) IXMattenuator::IXTattenuator::name = 'name'`

Definition at line 18 of file IXMattenuator.f90.

**6.200.2.3** `real(dp) IXMattenuator::IXTattenuator::distance = 0.0_dp`

Definition at line 19 of file IXMattenuator.f90.

**6.200.2.4** `character(len=long_len) IXMattenuator::IXTattenuator::material = 'material'`

Definition at line 20 of file IXMattenuator.f90.

**6.200.2.5** `real(dp) IXMattenuator::IXTattenuator::thickness = 0.0_dp`

Definition at line 21 of file IXMattenuator.f90.

**6.200.2.6** `type(IXTdataset_1d) IXMattenuator::IXTattenuator::attenuation`

Definition at line 22 of file IXMattenuator.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMattenuator.f90`

## 6.201 IXMbase::IXTbase Struct Reference

### Public Attributes

- `character(len=name_len) entry_name = 'unknown'`
- `integer(i4b) initialised = IXCobject_initialised`
- `logical valid = .false.`

#### 6.201.1 Detailed Description

Definition at line 11 of file IXMbase.f90.

#### 6.201.2 Member Data Documentation

##### 6.201.2.1 `character(len=name_len) IXMbase::IXTbase::entry_name = 'unknown'`

Definition at line 13 of file IXMbase.f90.

##### 6.201.2.2 `integer(i4b) IXMbase::IXTbase::initialised = IXCobject_initialised`

Definition at line 15 of file IXMbase.f90.

##### 6.201.2.3 `logical IXMbase::IXTbase::valid = .false.`

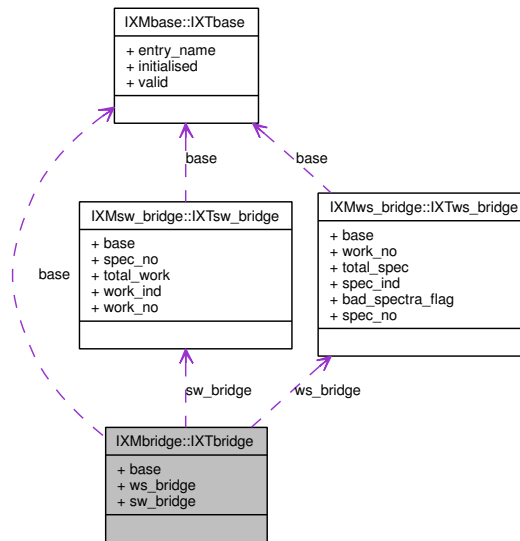
Definition at line 16 of file IXMbase.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMbase.f90`

## 6.202 IXMbridge::IXTbridge Struct Reference

Collaboration diagram for IXMbridge::IXTbridge:



### Public Attributes

- `type(IXTbase)` `base`
- `type(IXTws_bridge)` `ws_bridge`
- `type(IXTsw_bridge)` `sw_bridge`

### 6.202.1 Detailed Description

Definition at line 15 of file IXMbridge.f90.

### 6.202.2 Member Data Documentation

#### 6.202.2.1 `type(IXTbase)` IXMbridge::IXTbridge::base

Definition at line 17 of file IXMbridge.f90.

#### 6.202.2.2 `type(IXTws_bridge)` IXMbridge::IXTbridge::ws\_bridge

Definition at line 18 of file IXMbridge.f90.

#### 6.202.2.3 `type(IXTsw_bridge)` IXMbridge::IXTbridge::sw\_bridge

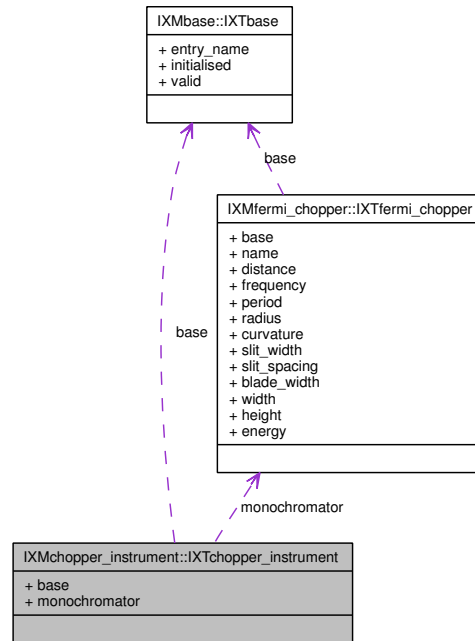
Definition at line 19 of file IXMbridge.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMbridge.f90`

## 6.203 IXMchopper\_instrument::IXTchopper\_instrument Struct Reference

Collaboration diagram for IXMchopper\_instrument::IXTchopper\_instrument:



### Public Attributes

- `type(IXTbase)` `base`
- `type(IXTfermi_chopper)` `monochromator`

### 6.203.1 Detailed Description

Definition at line 13 of file `IXMchopper_instrument.f90`.

### 6.203.2 Member Data Documentation

#### 6.203.2.1 `type(IXTbase)` `IXMchopper_instrument::IXTchopper_instrument::base`

Definition at line 15 of file `IXMchopper_instrument.f90`.

#### 6.203.2.2 `type(IXTfermi_chopper)` `IXMchopper_instrument::IXTchopper_instrument::monochromator`

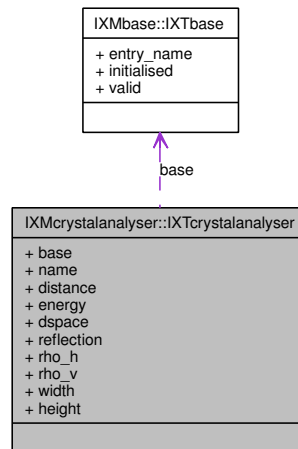
Definition at line 16 of file `IXMchopper_instrument.f90`.

The documentation for this struct was generated from the following file:

- `libclasses/IXMchopper_instrument.f90`

## 6.204 IXMcrystalanalyser::IXTcrystalanalyser Struct Reference

Collaboration diagram for IXMcrystalanalyser::IXTcrystalanalyser:



### Public Attributes

- `type(IXTbase)` `base`
- `character(len=long_len)` `name`
- `real(dp)` `distance`
- `real(dp)` `energy`
- `real(dp)` `dspace`
- `integer(i4b), dimension(3)` `reflection`
- `real(dp)` `rho_h`
- `real(dp)` `rho_v`
- `real(dp)` `width`
- `real(dp)` `height`

### 6.204.1 Detailed Description

Definition at line 6 of file IXMcrystalanalyser.f90.

### 6.204.2 Member Data Documentation

#### 6.204.2.1 `type(IXTbase)` IXMcrystalanalyser::IXTcrystalanalyser::base

Definition at line 8 of file IXMcrystalanalyser.f90.

#### 6.204.2.2 `character(len=long_len)` IXMcrystalanalyser::IXTcrystalanalyser::name

Definition at line 9 of file IXMcrystalanalyser.f90.

**6.204.2.3 real(dp) IXMcrystalanalyser::IXTcrystalanalyser::distance**

Definition at line 10 of file IXMcrystalanalyser.f90.

**6.204.2.4 real(dp) IXMcrystalanalyser::IXTcrystalanalyser::energy**

Definition at line 11 of file IXMcrystalanalyser.f90.

**6.204.2.5 real(dp) IXMcrystalanalyser::IXTcrystalanalyser::dspace**

Definition at line 12 of file IXMcrystalanalyser.f90.

**6.204.2.6 integer(i4b),dimension(3) IXMcrystalanalyser::IXTcrystalanalyser::reflection**

Definition at line 13 of file IXMcrystalanalyser.f90.

**6.204.2.7 real(dp) IXMcrystalanalyser::IXTcrystalanalyser::rho\_h**

Definition at line 14 of file IXMcrystalanalyser.f90.

**6.204.2.8 real(dp) IXMcrystalanalyser::IXTcrystalanalyser::rho\_v**

Definition at line 15 of file IXMcrystalanalyser.f90.

**6.204.2.9 real(dp) IXMcrystalanalyser::IXTcrystalanalyser::width**

Definition at line 16 of file IXMcrystalanalyser.f90.

**6.204.2.10 real(dp) IXMcrystalanalyser::IXTcrystalanalyser::height**

Definition at line 17 of file IXMcrystalanalyser.f90.

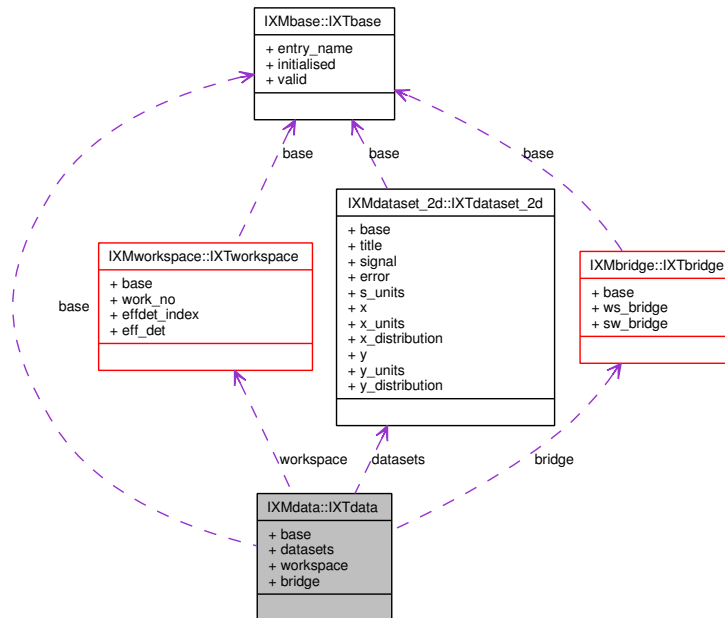
The documentation for this struct was generated from the following file:

- libclasses/IXMcrystalanalyser.f90



## 6.205 IXMdata::IXTdata Struct Reference

Collaboration diagram for IXMdata::IXTdata:



### Public Attributes

- `type(IXTbase)` `base`
- `type(IXTdataset_2d)`, `dimension(:)`, `allocatable datasets`
- `type(IXTworkspace)` `workspace`
- `type(IXTbridge)` `bridge`

### 6.205.1 Detailed Description

Definition at line 19 of file IXMdata.f90.

### 6.205.2 Member Data Documentation

#### 6.205.2.1 `type(IXTbase)` `IXMdata::IXTdata::base`

Definition at line 21 of file IXMdata.f90.

#### 6.205.2.2 `type(IXTdataset_2d)`, `dimension(:)`, `allocatable` `IXMdata::IXTdata::datasets`

Definition at line 24 of file IXMdata.f90.

**6.205.2.3 type(IXTworkspace) IXMdata::IXTdata::workspace**

Definition at line 25 of file IXMdata.f90.

**6.205.2.4 type(IXTbridge) IXMdata::IXTdata::bridge**

Definition at line 26 of file IXMdata.f90.

The documentation for this struct was generated from the following file:

- libclasses/**IXMdata.f90**

## 6.206 IXMdata\_source::IXTdata\_source Struct Reference

### Public Attributes

- `character(len=long_len), dimension(:), allocatable path`
- `character(len=long_len), dimension(:), allocatable datatype`
- `integer(i4b) counter = 0`

### 6.206.1 Detailed Description

Definition at line 15 of file IXMdata\_source.f90.

### 6.206.2 Member Data Documentation

#### 6.206.2.1 `character(len=long_len),dimension(:),allocatable IXMdata_source::IXTdata_source::path`

Definition at line 16 of file IXMdata\_source.f90.

#### 6.206.2.2 `character(len=long_len),dimension(:),allocatable IXMdata_source::IXTdata_source::datatype`

Definition at line 17 of file IXMdata\_source.f90.

#### 6.206.2.3 `integer(i4b) IXMdata_source::IXTdata_source::counter = 0`

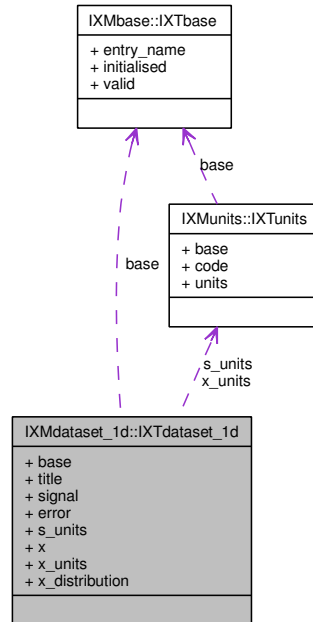
Definition at line 18 of file IXMdata\_source.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMdata_source.f90`

## 6.207 IXMdataset\_1d::IXTdataset\_1d Struct Reference

Collaboration diagram for IXMdataset\_1d::IXTdataset\_1d:



### Public Attributes

- `type(IXTbase) base`
- `character(len=long_len) title = 'title'`
- `real(dp), dimension(:), pointer signal = >NULL()`
- `real(dp), dimension(:), pointer error = >NULL()`
- `type(IXTunits) s_units`
- `real(dp), dimension(:), pointer x = >NULL()`
- `type(IXTunits) x_units`
- `logical x_distribution = .false.`

### 6.207.1 Detailed Description

Definition at line 16 of file IXMdataset\_1d.f90.

### 6.207.2 Member Data Documentation

#### 6.207.2.1 `type(IXTbase) IXMdataset_1d::IXTdataset_1d::base`

Definition at line 18 of file IXMdataset\_1d.f90.

#### 6.207.2.2 `character(len=long_len) IXMdataset_1d::IXTdataset_1d::title = 'title'`

Definition at line 19 of file IXMdataset\_1d.f90.

**6.207.2.3** `real(dp),dimension(:),pointer IXMdataset_1d::IXTdataset_1d::signal =>NULL()`

Definition at line 20 of file IXMdataset\_1d.f90.

**6.207.2.4** `real(dp),dimension(:),pointer IXMdataset_1d::IXTdataset_1d::error =>NULL()`

Definition at line 21 of file IXMdataset\_1d.f90.

**6.207.2.5** `type(IXTunits) IXMdataset_1d::IXTdataset_1d::s_units`

Definition at line 22 of file IXMdataset\_1d.f90.

**6.207.2.6** `real(dp),dimension(:),pointer IXMdataset_1d::IXTdataset_1d::x =>NULL()`

Definition at line 23 of file IXMdataset\_1d.f90.

**6.207.2.7** `type(IXTunits) IXMdataset_1d::IXTdataset_1d::x_units`

Definition at line 24 of file IXMdataset\_1d.f90.

**6.207.2.8** `logical IXMdataset_1d::IXTdataset_1d::x_distribution = .false.`

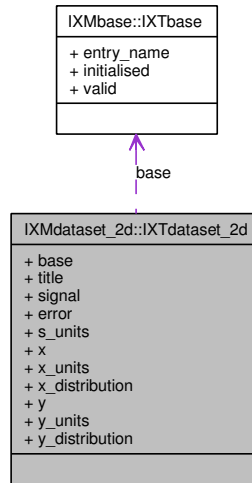
Definition at line 28 of file IXMdataset\_1d.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMdataset\_1d.f90

## 6.208 IXMdataset\_2d::IXTdataset\_2d Struct Reference

Collaboration diagram for IXMdataset\_2d::IXTdataset\_2d:



### Public Attributes

- `type(IXTbase) base`
- `character(len=long_len) title = 'title'`
- `real(dp), dimension(:,:), pointer signal = >NULL()`
- `real(dp), dimension(:,:), pointer error = >NULL()`
- `type(IXTunits) s_units`
- `real(dp), dimension(:), pointer x = >NULL()`
- `type(IXTunits) x_units`
- `logical x_distribution = .false.`
- `real(dp), dimension(:), pointer y = >NULL()`
- `type(IXTunits) y_units`
- `logical y_distribution = .false.`

### 6.208.1 Detailed Description

Definition at line 13 of file IXMdataset\_2d.f90.

### 6.208.2 Member Data Documentation

#### 6.208.2.1 `type(IXTbase) IXMdataset_2d::IXTdataset_2d::base`

Definition at line 15 of file IXMdataset\_2d.f90.

#### 6.208.2.2 `character(len=long_len) IXMdataset_2d::IXTdataset_2d::title = 'title'`

Definition at line 16 of file IXMdataset\_2d.f90.

**6.208.2.3** `real(dp),dimension(:,:),pointer IXMdataset_2d::IXTdataset_2d::signal =>NULL()`

Definition at line 17 of file IXMdataset\_2d.f90.

**6.208.2.4** `real(dp),dimension(:,:),pointer IXMdataset_2d::IXTdataset_2d::error =>NULL()`

Definition at line 18 of file IXMdataset\_2d.f90.

**6.208.2.5** `type(IXTunits) IXMdataset_2d::IXTdataset_2d::s_units`

Definition at line 19 of file IXMdataset\_2d.f90.

**6.208.2.6** `real(dp),dimension(:),pointer IXMdataset_2d::IXTdataset_2d::x =>NULL()`

Definition at line 20 of file IXMdataset\_2d.f90.

**6.208.2.7** `type(IXTunits) IXMdataset_2d::IXTdataset_2d::x_units`

Definition at line 21 of file IXMdataset\_2d.f90.

**6.208.2.8** `logical IXMdataset_2d::IXTdataset_2d::x_distribution = .false.`

Definition at line 25 of file IXMdataset\_2d.f90.

**6.208.2.9** `real(dp),dimension(:),pointer IXMdataset_2d::IXTdataset_2d::y =>NULL()`

Definition at line 26 of file IXMdataset\_2d.f90.

**6.208.2.10** `type(IXTunits) IXMdataset_2d::IXTdataset_2d::y_units`

Definition at line 27 of file IXMdataset\_2d.f90.

**6.208.2.11** `logical IXMdataset_2d::IXTdataset_2d::y_distribution = .false.`

Definition at line 31 of file IXMdataset\_2d.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMdataset_2d.f90`

## 6.209 IXMdataset\_3d::IXTdataset\_3d Struct Reference

### Public Attributes

- `type(IXTbase) base`
- `character(len=long_len) title = 'title'`
- `real(dp), dimension(:, :, :), pointer signal = >NULL()`
- `real(dp), dimension(:, :, :), pointer error = >NULL()`
- `type(IXTunits) s_units`
- `real(dp), dimension(:), pointer x = >NULL()`
- `type(IXTunits) x_units`
- `logical x_distribution = .false.`
- `real(dp), dimension(:), pointer y = >NULL()`
- `type(IXTunits) y_units`
- `logical y_distribution = .false.`
- `real(dp), dimension(:), pointer z = >NULL()`
- `type(IXTunits) z_units`
- `logical z_distribution = .false.`

### 6.209.1 Detailed Description

Definition at line 13 of file IXMdataset\_3d.f90.

### 6.209.2 Member Data Documentation

#### 6.209.2.1 `type(IXTbase) IXMdataset_3d::IXTdataset_3d::base`

Definition at line 15 of file IXMdataset\_3d.f90.

#### 6.209.2.2 `character(len=long_len) IXMdataset_3d::IXTdataset_3d::title = 'title'`

Definition at line 16 of file IXMdataset\_3d.f90.

#### 6.209.2.3 `real(dp),dimension(:, :, :),pointer IXMdataset_3d::IXTdataset_3d::signal = >NULL()`

Definition at line 17 of file IXMdataset\_3d.f90.

#### 6.209.2.4 `real(dp),dimension(:, :, :),pointer IXMdataset_3d::IXTdataset_3d::error = >NULL()`

Definition at line 18 of file IXMdataset\_3d.f90.

#### 6.209.2.5 `type(IXTunits) IXMdataset_3d::IXTdataset_3d::s_units`

Definition at line 19 of file IXMdataset\_3d.f90.



**6.209.2.6** `real(dp),dimension(:),pointer IXMdataset_3d::IXTdataset_3d::x =>NULL()`

Definition at line 20 of file IXMdataset\_3d.f90.

**6.209.2.7** `type(IXTunits) IXMdataset_3d::IXTdataset_3d::x_units`

Definition at line 21 of file IXMdataset\_3d.f90.

**6.209.2.8** `logical IXMdataset_3d::IXTdataset_3d::x_distribution = .false.`

Definition at line 25 of file IXMdataset\_3d.f90.

**6.209.2.9** `real(dp),dimension(:),pointer IXMdataset_3d::IXTdataset_3d::y =>NULL()`

Definition at line 26 of file IXMdataset\_3d.f90.

**6.209.2.10** `type(IXTunits) IXMdataset_3d::IXTdataset_3d::y_units`

Definition at line 27 of file IXMdataset\_3d.f90.

**6.209.2.11** `logical IXMdataset_3d::IXTdataset_3d::y_distribution = .false.`

Definition at line 31 of file IXMdataset\_3d.f90.

**6.209.2.12** `real(dp),dimension(:),pointer IXMdataset_3d::IXTdataset_3d::z =>NULL()`

Definition at line 32 of file IXMdataset\_3d.f90.

**6.209.2.13** `type(IXTunits) IXMdataset_3d::IXTdataset_3d::z_units`

Definition at line 33 of file IXMdataset\_3d.f90.

**6.209.2.14** `logical IXMdataset_3d::IXTdataset_3d::z_distribution = .false.`

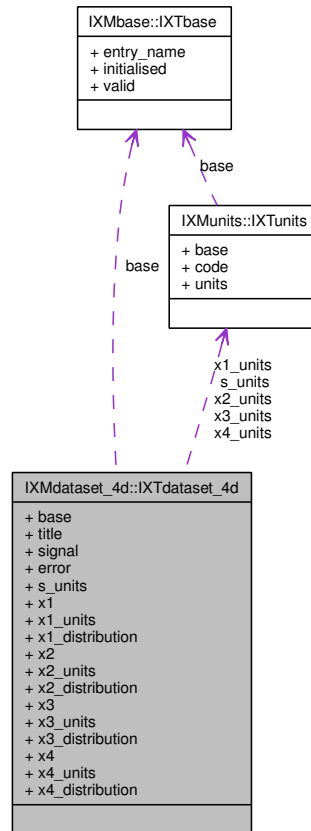
Definition at line 37 of file IXMdataset\_3d.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMdataset_3d.f90`

## 6.210 IXMdataset\_4d::IXTdataset\_4d Struct Reference

Collaboration diagram for IXMdataset\_4d::IXTdataset\_4d:



### Public Attributes

- `type(IXTbase) base`
- `character(len=long_len) title = 'title'`
- `real(dp), dimension(:, :, :), pointer signal = >NULL()`
- `real(dp), dimension(:, :, :), pointer error = >NULL()`
- `type(IXTunits) s_units`
- `real(dp), dimension(:), pointer x1 = >NULL()`
- `type(IXTunits) x1_units`
- `logical x1_distribution = .false.`
- `real(dp), dimension(:), pointer x2 = >NULL()`
- `type(IXTunits) x2_units`
- `logical x2_distribution = .false.`
- `real(dp), dimension(:), pointer x3 = >NULL()`
- `type(IXTunits) x3_units`
- `logical x3_distribution = .false.`
- `real(dp), dimension(:), pointer x4 = >NULL()`
- `type(IXTunits) x4_units`
- `logical x4_distribution = .false.`

### 6.210.1 Detailed Description

Definition at line 20 of file IXMdataset\_4d.f90.

### 6.210.2 Member Data Documentation

#### 6.210.2.1 `type(IXTbase) IXMdataset_4d::IXTdataset_4d::base`

Definition at line 22 of file IXMdataset\_4d.f90.

#### 6.210.2.2 `character(len=long_len) IXMdataset_4d::IXTdataset_4d::title = 'title'`

Definition at line 23 of file IXMdataset\_4d.f90.

#### 6.210.2.3 `real(dp),dimension(:,:,:),pointer IXMdataset_4d::IXTdataset_4d::signal =>NULL()`

Definition at line 24 of file IXMdataset\_4d.f90.

#### 6.210.2.4 `real(dp),dimension(:,:,:),pointer IXMdataset_4d::IXTdataset_4d::error =>NULL()`

Definition at line 25 of file IXMdataset\_4d.f90.

#### 6.210.2.5 `type(IXTunits) IXMdataset_4d::IXTdataset_4d::s_units`

Definition at line 26 of file IXMdataset\_4d.f90.

#### 6.210.2.6 `real(dp),dimension(:),pointer IXMdataset_4d::IXTdataset_4d::x1 = >NULL()`

Definition at line 27 of file IXMdataset\_4d.f90.

#### 6.210.2.7 `type(IXTunits) IXMdataset_4d::IXTdataset_4d::x1_units`

Definition at line 28 of file IXMdataset\_4d.f90.

#### 6.210.2.8 `logical IXMdataset_4d::IXTdataset_4d::x1_distribution = .false.`

Definition at line 32 of file IXMdataset\_4d.f90.

#### 6.210.2.9 `real(dp),dimension(:),pointer IXMdataset_4d::IXTdataset_4d::x2 = >NULL()`

Definition at line 33 of file IXMdataset\_4d.f90.

**6.210.2.10** `type(IXTunits) IXMdataset_4d::IXTdataset_4d::x2_units`

Definition at line 34 of file IXMdataset\_4d.f90.

**6.210.2.11** `logical IXMdataset_4d::IXTdataset_4d::x2_distribution = .false.`

Definition at line 38 of file IXMdataset\_4d.f90.

**6.210.2.12** `real(dp),dimension(:),pointer IXMdataset_4d::IXTdataset_4d::x3 =>NULL()`

Definition at line 39 of file IXMdataset\_4d.f90.

**6.210.2.13** `type(IXTunits) IXMdataset_4d::IXTdataset_4d::x3_units`

Definition at line 40 of file IXMdataset\_4d.f90.

**6.210.2.14** `logical IXMdataset_4d::IXTdataset_4d::x3_distribution = .false.`

Definition at line 44 of file IXMdataset\_4d.f90.

**6.210.2.15** `real(dp),dimension(:),pointer IXMdataset_4d::IXTdataset_4d::x4 =>NULL()`

Definition at line 45 of file IXMdataset\_4d.f90.

**6.210.2.16** `type(IXTunits) IXMdataset_4d::IXTdataset_4d::x4_units`

Definition at line 46 of file IXMdataset\_4d.f90.

**6.210.2.17** `logical IXMdataset_4d::IXTdataset_4d::x4_distribution = .false.`

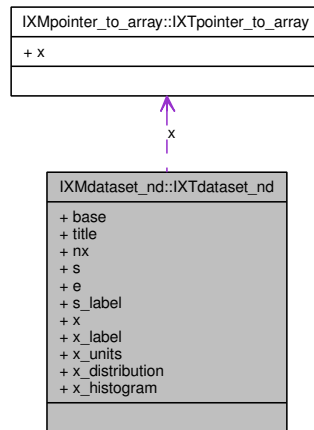
Definition at line 50 of file IXMdataset\_4d.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMdataset_4d.f90`

## 6.211 IXMdataset\_nd::IXTdataset\_nd Struct Reference

Collaboration diagram for IXMdataset\_nd::IXTdataset\_nd:



### Public Attributes

- type(IXTbase) base
- character(len=long\_len) title
- integer(i4b), dimension(:), pointer nx
- real(dp), dimension(:), pointer s
- real(dp), dimension(:), pointer e
- character(len=long\_len) s\_label
- type(IXTpointer\_to\_array), dimension(:), pointer x
- character(len=long\_len), dimension(:), pointer x\_label
- character(len=short\_len), dimension(:), pointer x\_units
- logical, dimension(:), pointer x\_distribution
- logical, dimension(:), pointer x\_histogram

#### 6.211.1 Detailed Description

Definition at line 16 of file IXMdataset\_nd.f90.

#### 6.211.2 Member Data Documentation

##### 6.211.2.1 type(IXTbase) IXMdataset\_nd::IXTdataset\_nd::base

Definition at line 18 of file IXMdataset\_nd.f90.

##### 6.211.2.2 character(len=long\_len) IXMdataset\_nd::IXTdataset\_nd::title

Definition at line 19 of file IXMdataset\_nd.f90.

**6.211.2.3 integer(i4b),dimension(:) ,pointer IXMdataset\_nd::IXTdataset\_nd::nx**

Definition at line 20 of file IXMdataset\_nd.f90.

**6.211.2.4 real(dp),dimension(:) ,pointer IXMdataset\_nd::IXTdataset\_nd::s**

Definition at line 21 of file IXMdataset\_nd.f90.

**6.211.2.5 real(dp),dimension(:) ,pointer IXMdataset\_nd::IXTdataset\_nd::e**

Definition at line 22 of file IXMdataset\_nd.f90.

**6.211.2.6 character(len=long\_len) IXMdataset\_nd::IXTdataset\_nd::s\_label**

Definition at line 23 of file IXMdataset\_nd.f90.

**6.211.2.7 type (IXTpointer\_to\_array),dimension(:),pointer  
IXMdataset\_nd::IXTdataset\_nd::x**

Definition at line 27 of file IXMdataset\_nd.f90.

**6.211.2.8 character(len=long\_len),dimension(:) ,pointer  
IXMdataset\_nd::IXTdataset\_nd::x\_label**

Definition at line 28 of file IXMdataset\_nd.f90.

**6.211.2.9 character(len=short\_len),dimension(:) ,pointer  
IXMdataset\_nd::IXTdataset\_nd::x\_units**

Definition at line 29 of file IXMdataset\_nd.f90.

**6.211.2.10 logical,dimension(:),pointer IXMdataset\_nd::IXTdataset\_nd::x\_  
distribution**

Definition at line 33 of file IXMdataset\_nd.f90.

**6.211.2.11 logical,dimension(:),pointer IXMdataset\_nd::IXTdataset\_nd::x\_  
histogram**

Definition at line 37 of file IXMdataset\_nd.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMdataset\_nd.f90

## 6.212 IXMdatum::IXTdatum Struct Reference

### Public Attributes

- `real(dp) val = 0.0_dp`
- `real(dp) err = 0.0_dp`

### 6.212.1 Detailed Description

Definition at line 16 of file `IXMdatum.f90`.

### 6.212.2 Member Data Documentation

#### 6.212.2.1 `real(dp) IXMdatum::IXTdatum::val = 0.0_dp`

Definition at line 18 of file `IXMdatum.f90`.

#### 6.212.2.2 `real(dp) IXMdatum::IXTdatum::err = 0.0_dp`

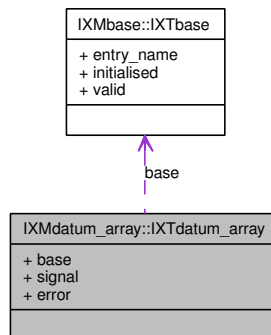
Definition at line 19 of file `IXMdatum.f90`.

The documentation for this struct was generated from the following file:

- `libclasses/IXMdatum.f90`

## 6.213 IXMdatum\_array::IXTdatum\_array Struct Reference

Collaboration diagram for IXMdatum\_array::IXTdatum\_array:



### Public Attributes

- `type(IXTbase) base`
- `real(dp), dimension(:), pointer signal = >NULL()`
- `real(dp), dimension(:), pointer error = >NULL()`

### 6.213.1 Detailed Description

Definition at line 16 of file IXMdatum\_array.f90.

### 6.213.2 Member Data Documentation

#### 6.213.2.1 `type(IXTbase) IXMdatum_array::IXTdatum_array::base`

Definition at line 18 of file IXMdatum\_array.f90.

#### 6.213.2.2 `real(dp),dimension(:),pointer IXMdatum_array::IXTdatum_array::signal = >NULL()`

Definition at line 19 of file IXMdatum\_array.f90.

#### 6.213.2.3 `real(dp),dimension(:),pointer IXMdatum_array::IXTdatum_array::error = >NULL()`

Definition at line 20 of file IXMdatum\_array.f90.

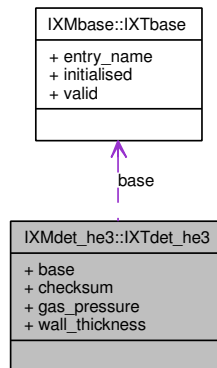
The documentation for this struct was generated from the following file:

- `libclasses/IXMdatum_array.f90`



## 6.214 IXMdet\_he3::IXTdet\_he3 Struct Reference

Collaboration diagram for IXMdet\_he3::IXTdet\_he3:



### Public Attributes

- `type(IXTbase) base`
- `integer(i4b), dimension(:), pointer checksum = >NULL()`
- `real(dp), dimension(:), pointer gas_pressure = >NULL()`
- `real(dp), dimension(:), pointer wall_thickness = >NULL()`

#### 6.214.1 Detailed Description

Definition at line 12 of file IXMdet\_he3.f90.

#### 6.214.2 Member Data Documentation

##### 6.214.2.1 `type(IXTbase) IXMdet_he3::IXTdet_he3::base`

Definition at line 14 of file IXMdet\_he3.f90.

##### 6.214.2.2 `integer(i4b),dimension(:),pointer IXMdet_he3::IXTdet_he3::checksum = >NULL()`

Definition at line 15 of file IXMdet\_he3.f90.

##### 6.214.2.3 `real(dp),dimension(:),pointer IXMdet_he3::IXTdet_he3::gas_pressure = >NULL()`

Definition at line 16 of file IXMdet\_he3.f90.

##### 6.214.2.4 `real(dp),dimension(:),pointer IXMdet_he3::IXTdet_he3::wall_thickness = >NULL()`

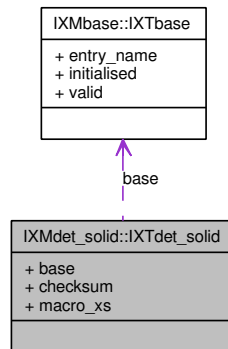
Definition at line 17 of file IXMdet\_he3.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMdet\_he3.f90

## 6.215 IXMdet \_solid::IXTdet \_solid Struct Reference

Collaboration diagram for IXMdet \_solid::IXTdet \_solid:



### Public Attributes

- `type(IXTbase) base`
- `integer(i4b), dimension(:), pointer checksum = >NULL()`
- `real(dp), dimension(:), pointer macro_xs = >NULL()`

### 6.215.1 Detailed Description

Definition at line 12 of file IXMdet \_solid.f90.

### 6.215.2 Member Data Documentation

#### 6.215.2.1 `type(IXTbase) IXMdet _solid::IXTdet _solid::base`

Definition at line 14 of file IXMdet \_solid.f90.

#### 6.215.2.2 `integer(i4b),dimension(:),pointer IXMdet _solid::IXTdet _solid::checksum = >NULL()`

Definition at line 15 of file IXMdet \_solid.f90.

#### 6.215.2.3 `real(dp),dimension(:),pointer IXMdet _solid::IXTdet _solid::macro_xs = >NULL()`

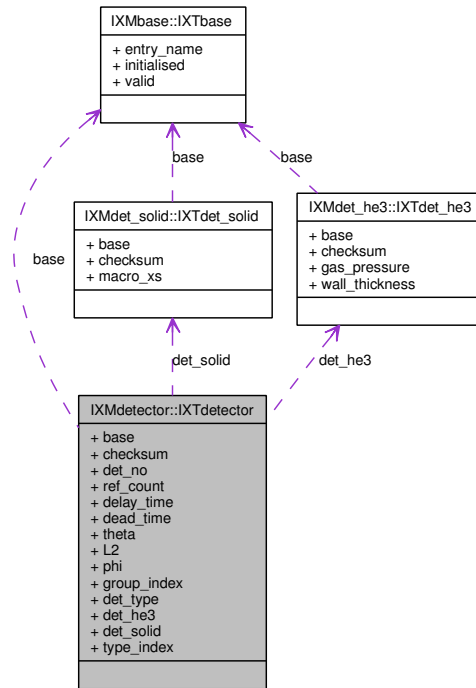
Definition at line 16 of file IXMdet \_solid.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMdet _solid.f90`

## 6.216 IXMdetector::IXTdetector Struct Reference

Collaboration diagram for IXMdetector::IXTdetector:



### Public Attributes

- type(IXTbase) base
- integer(i4b), dimension(:), pointer checksum = >NULL()
- integer(i4b), dimension(:), pointer det\_no = >NULL()
- integer(i4b) ref\_count = 1
- real(dp), dimension(:), pointer delay\_time = >NULL()
- real(dp), dimension(:), pointer dead\_time = >NULL()
- real(dp), dimension(:), pointer theta = >NULL()
- real(dp), pointer L2 = >NULL()
- real(dp), dimension(:), pointer phi = >NULL()
- integer(i4b), dimension(:), pointer group\_index = >NULL()
- integer(i4b), dimension(:), pointer det\_type = >NULL()
- type(IXTdet\_he3) det\_he3
- type(IXTdet\_solid) det\_solid
- integer(i4b), dimension(:), pointer type\_index = >NULL()

### 6.216.1 Detailed Description

Definition at line 22 of file IXMdetector.f90.

## 6.216.2 Member Data Documentation

### 6.216.2.1 `type(IXTbase) IXMdetector::IXTdetector::base`

Definition at line 25 of file IXMdetector.f90.

### 6.216.2.2 `integer(i4b),dimension(:),pointer IXMdetector::IXTdetector::checksum = >NULL()`

Definition at line 26 of file IXMdetector.f90.

### 6.216.2.3 `integer(i4b),dimension(:),pointer IXMdetector::IXTdetector::det_no = >NULL()`

Definition at line 27 of file IXMdetector.f90.

### 6.216.2.4 `integer(i4b) IXMdetector::IXTdetector::ref_count = 1`

Definition at line 29 of file IXMdetector.f90.

### 6.216.2.5 `real(dp),dimension(:),pointer IXMdetector::IXTdetector::delay_time = >NULL()`

Definition at line 42 of file IXMdetector.f90.

### 6.216.2.6 `real(dp),dimension(:),pointer IXMdetector::IXTdetector::dead_time = >NULL()`

Definition at line 43 of file IXMdetector.f90.

### 6.216.2.7 `real(dp),dimension(:),pointer IXMdetector::IXTdetector::theta = >NULL()`

Definition at line 44 of file IXMdetector.f90.

### 6.216.2.8 `real(dp),pointer IXMdetector::IXTdetector::L2 = >NULL()`

Definition at line 45 of file IXMdetector.f90.

### 6.216.2.9 `real(dp),dimension(:),pointer IXMdetector::IXTdetector::phi = >NULL()`

Definition at line 46 of file IXMdetector.f90.

### 6.216.2.10 `integer(i4b),dimension(:),pointer IXMdetector::IXTdetector::group_index = >NULL()`

Definition at line 47 of file IXMdetector.f90.

**6.216.2.11** `integer(i4b),dimension(:),pointer IXMdetector::IXTdetector::det_type = >NULL()`

Definition at line 48 of file IXMdetector.f90.

**6.216.2.12** `type(IXTdet_he3) IXMdetector::IXTdetector::det_he3`

Definition at line 49 of file IXMdetector.f90.

**6.216.2.13** `type(IXTdet_solid) IXMdetector::IXTdetector::det_solid`

Definition at line 50 of file IXMdetector.f90.

**6.216.2.14** `integer(i4b),dimension(:),pointer IXMdetector::IXTdetector::type_index = >NULL()`

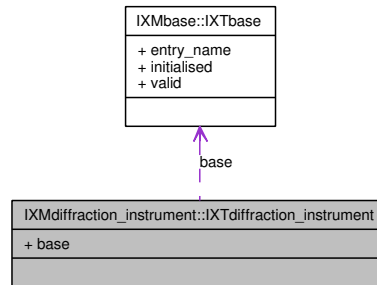
Definition at line 51 of file IXMdetector.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMdetector.f90`

## 6.217 IXMdiffraction\_instrument::IXTdiffraction\_instrument Struct Reference

Collaboration diagram for IXMdiffraction\_instrument::IXTdiffraction\_instrument:



### Public Attributes

- `type(IXTbase) base`

### 6.217.1 Detailed Description

Definition at line 14 of file `IXMdiffraction_instrument.f90`.

### 6.217.2 Member Data Documentation

#### 6.217.2.1 `type(IXTbase) IXMdiffraction_instrument::IXTdiffraction_instrument::base`

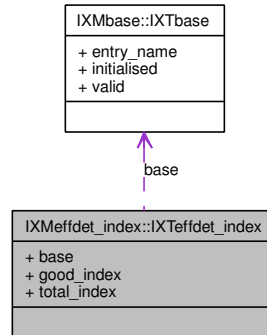
Definition at line 16 of file `IXMdiffraction_instrument.f90`.

The documentation for this struct was generated from the following file:

- `libclasses/IXMdiffraction_instrument.f90`

## 6.218 IXMeffdet\_index::IXTeffdet\_index Struct Reference

Collaboration diagram for IXMeffdet\_index::IXTeffdet\_index:



### Public Attributes

- `type(IXTbase) base`
- `integer(i4b), dimension(:), pointer good_index = >NULL()`
- `integer(i4b), dimension(:), pointer total_index = >NULL()`

### 6.218.1 Detailed Description

Definition at line 16 of file IXMeffdet\_index.f90.

### 6.218.2 Member Data Documentation

#### 6.218.2.1 `type(IXTbase) IXMeffdet_index::IXTeffdet_index::base`

Definition at line 18 of file IXMeffdet\_index.f90.

#### 6.218.2.2 `integer(i4b),dimension(:),pointer IXMeffdet_index::IXTeffdet_index::good_index = >NULL()`

Definition at line 19 of file IXMeffdet\_index.f90.

#### 6.218.2.3 `integer(i4b),dimension(:),pointer IXMeffdet_index::IXTeffdet_index::total_index = >NULL()`

Definition at line 20 of file IXMeffdet\_index.f90.

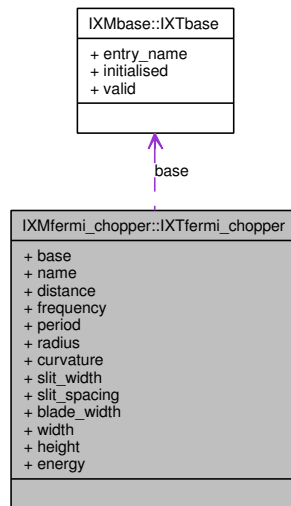
The documentation for this struct was generated from the following file:

- `libclasses/IXMeffdet_index.f90`



## 6.219 IXMfermi\_chopper::IXTfermi\_chopper Struct Reference

Collaboration diagram for IXMfermi\_chopper::IXTfermi\_chopper:



### Public Attributes

- `type(IXTbase)` `base`
- `character(len=short_len) name = 'name'`
- `real(dp) distance = 0.0_dp`
- `real(dp) frequency = 0.0_dp`
- `real(dp) period = 0.0_dp`
- `real(dp) radius = 0.0_dp`
- `real(dp) curvature = 0.0_dp`
- `real(dp) slit_width = 0.0_dp`
- `real(dp) slit_spacing = 0.0_dp`
- `real(dp) blade_width = 0.0_dp`
- `real(dp) width = 0.0_dp`
- `real(dp) height = 0.0_dp`
- `real(dp) energy = 0.0_dp`

### 6.219.1 Detailed Description

Definition at line 17 of file IXMfermi\_chopper.f90.

### 6.219.2 Member Data Documentation

#### 6.219.2.1 `type(IXTbase)` IXMfermi\_chopper::IXTfermi\_chopper::base

Definition at line 19 of file IXMfermi\_chopper.f90.

**6.219.2.2** `character(len=short_len) IXMfermi_chopper::IXTfermi_chopper::name = 'name'`

Definition at line 20 of file IXMfermi\_chopper.f90.

**6.219.2.3** `real(dp) IXMfermi_chopper::IXTfermi_chopper::distance = 0.0_dp`

Definition at line 21 of file IXMfermi\_chopper.f90.

**6.219.2.4** `real(dp) IXMfermi_chopper::IXTfermi_chopper::frequency = 0.0_dp`

Definition at line 22 of file IXMfermi\_chopper.f90.

**6.219.2.5** `real(dp) IXMfermi_chopper::IXTfermi_chopper::period = 0.0_dp`

Definition at line 23 of file IXMfermi\_chopper.f90.

**6.219.2.6** `real(dp) IXMfermi_chopper::IXTfermi_chopper::radius = 0.0_dp`

Definition at line 24 of file IXMfermi\_chopper.f90.

**6.219.2.7** `real(dp) IXMfermi_chopper::IXTfermi_chopper::curvature = 0.0_dp`

Definition at line 25 of file IXMfermi\_chopper.f90.

**6.219.2.8** `real(dp) IXMfermi_chopper::IXTfermi_chopper::slit_width = 0.0_dp`

Definition at line 26 of file IXMfermi\_chopper.f90.

**6.219.2.9** `real(dp) IXMfermi_chopper::IXTfermi_chopper::slit_spacing = 0.0_dp`

Definition at line 27 of file IXMfermi\_chopper.f90.

**6.219.2.10** `real(dp) IXMfermi_chopper::IXTfermi_chopper::blade_width = 0.0_dp`

Definition at line 28 of file IXMfermi\_chopper.f90.

**6.219.2.11** `real(dp) IXMfermi_chopper::IXTfermi_chopper::width = 0.0_dp`

Definition at line 29 of file IXMfermi\_chopper.f90.

**6.219.2.12** `real(dp) IXMfermi_chopper::IXTfermi_chopper::height = 0.0_dp`

Definition at line 30 of file IXMfermi\_chopper.f90.

**6.219.2.13** real(dp) IXMfermi\_chopper::IXTfermi\_chopper::energy = 0.0\_dp

Definition at line 31 of file IXMfermi\_chopper.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMfermi\_chopper.f90

## 6.220 IXMfileio::IXTfileio Struct Reference

### Public Attributes

- `character(len=256) file_name = ''`
- `integer mode`
- `integer, dimension(15000) file_id`

### 6.220.1 Detailed Description

Definition at line 6 of file IXMfileio.f90.

### 6.220.2 Member Data Documentation

#### 6.220.2.1 `character(len=256) IXMfileio::IXTfileio::file_name = ''`

Definition at line 7 of file IXMfileio.f90.

#### 6.220.2.2 `integer IXMfileio::IXTfileio::mode`

Definition at line 8 of file IXMfileio.f90.

#### 6.220.2.3 `integer,dimension(15000) IXMfileio::IXTfileio::file_id`

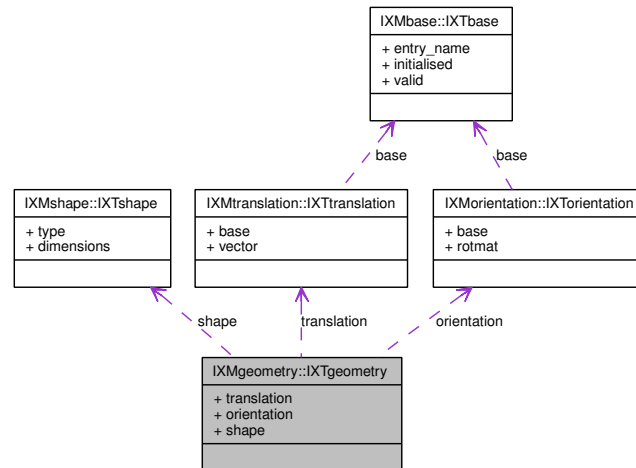
Definition at line 9 of file IXMfileio.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMfileio.f90`

## 6.221 IXMgeometry::IXTgeometry Struct Reference

Collaboration diagram for IXMgeometry::IXTgeometry:



### Public Attributes

- `type(IXTtranslation)` translation
- `type(IXTorientation)` orientation
- `type(IXTshape)` shape

### 6.221.1 Detailed Description

Definition at line 28 of file IXMgeometry.f90.

### 6.221.2 Member Data Documentation

#### 6.221.2.1 `type(IXTtranslation)` IXMgeometry::IXTgeometry::translation

Definition at line 30 of file IXMgeometry.f90.

#### 6.221.2.2 `type(IXTorientation)` IXMgeometry::IXTgeometry::orientation

Definition at line 31 of file IXMgeometry.f90.

#### 6.221.2.3 `type(IXTshape)` IXMgeometry::IXTgeometry::shape

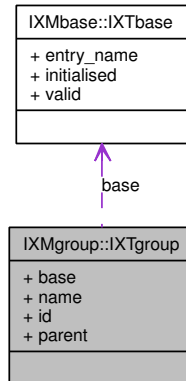
Definition at line 32 of file IXMgeometry.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMgeometry.f90`

## 6.222 IXMgroup::IXTgroup Struct Reference

Collaboration diagram for IXMgroup::IXTgroup:



### Public Attributes

- `type(IXTbase) base`
- `character(len=long_len) name = ''`
- `integer id = IXCinvalid_id_group`
- `integer parent = IXCinvalid_id_group`

#### 6.222.1 Detailed Description

Definition at line 15 of file IXMgroup.f90.

#### 6.222.2 Member Data Documentation

##### 6.222.2.1 `type(IXTbase) IXMgroup::IXTgroup::base`

Definition at line 16 of file IXMgroup.f90.

##### 6.222.2.2 `character(len=long_len) IXMgroup::IXTgroup::name = ''`

Definition at line 17 of file IXMgroup.f90.

##### 6.222.2.3 `integer IXMgroup::IXTgroup::id = IXCinvalid_id_group`

Definition at line 18 of file IXMgroup.f90.

##### 6.222.2.4 `integer IXMgroup::IXTgroup::parent = IXCinvalid_id_group`

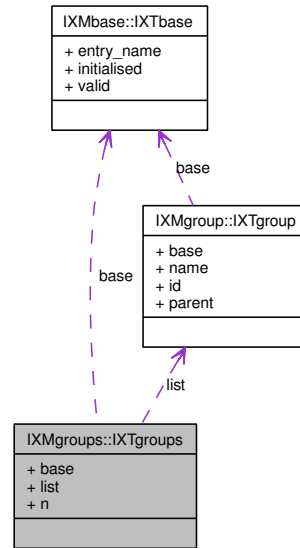
Definition at line 19 of file IXMgroup.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMgroup.f90

## 6.223 IXMgroups::IXTgroups Struct Reference

Collaboration diagram for IXMgroups::IXTgroups:



### Public Attributes

- `type(IXTbase) base`
- `type(IXTgroup), dimension(100) list`
- `integer(i4b) n = 0`

#### 6.223.1 Detailed Description

Definition at line 30 of file IXMgroups.f90.

#### 6.223.2 Member Data Documentation

##### 6.223.2.1 `type(IXTbase) IXMgroups::IXTgroups::base`

Definition at line 32 of file IXMgroups.f90.

##### 6.223.2.2 `type(IXTgroup),dimension(100) IXMgroups::IXTgroups::list`

Definition at line 33 of file IXMgroups.f90.

##### 6.223.2.3 `integer(i4b) IXMgroups::IXTgroups::n = 0`

Definition at line 34 of file IXMgroups.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMgroups.f90`



## 6.224 IXMhistory::IXThistory Struct Reference

### Public Attributes

- `character(len=long_len), dimension(:), allocatable entry`
- `integer(i4b) counter = 0`

### 6.224.1 Detailed Description

Definition at line 15 of file IXMhistory.f90.

### 6.224.2 Member Data Documentation

#### 6.224.2.1 `character(len=long_len),dimension(:),allocatable IXMhistory::IXThistory::entry`

Definition at line 16 of file IXMhistory.f90.

#### 6.224.2.2 `integer(i4b) IXMhistory::IXThistory::counter = 0`

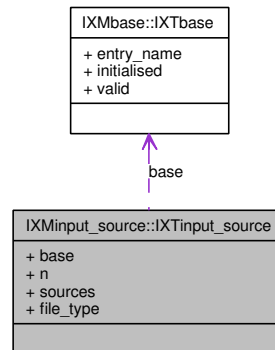
Definition at line 17 of file IXMhistory.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMhistory.f90`

## 6.225 IXMinput\_source::IXTinput\_source Struct Reference

Collaboration diagram for IXMinput\_source::IXTinput\_source:



### Public Attributes

- `type(IXTbase) base`
- `integer n = 0`
- `character(len=long_len), dimension(100) sources`
- `integer, dimension(100) file_type = IXCtype_unknown`

### 6.225.1 Detailed Description

Definition at line 18 of file IXMinput\_source.f90.

### 6.225.2 Member Data Documentation

#### 6.225.2.1 `type(IXTbase) IXMinput_source::IXTinput_source::base`

Definition at line 20 of file IXMinput\_source.f90.

#### 6.225.2.2 `integer IXMinput_source::IXTinput_source::n = 0`

Definition at line 21 of file IXMinput\_source.f90.

#### 6.225.2.3 `character(len=long_len),dimension(100) IXMinput_source::IXTinput_source::sources`

Definition at line 22 of file IXMinput\_source.f90.

#### 6.225.2.4 `integer,dimension(100) IXMinput_source::IXTinput_source::file_type = IXCtype_unknown`

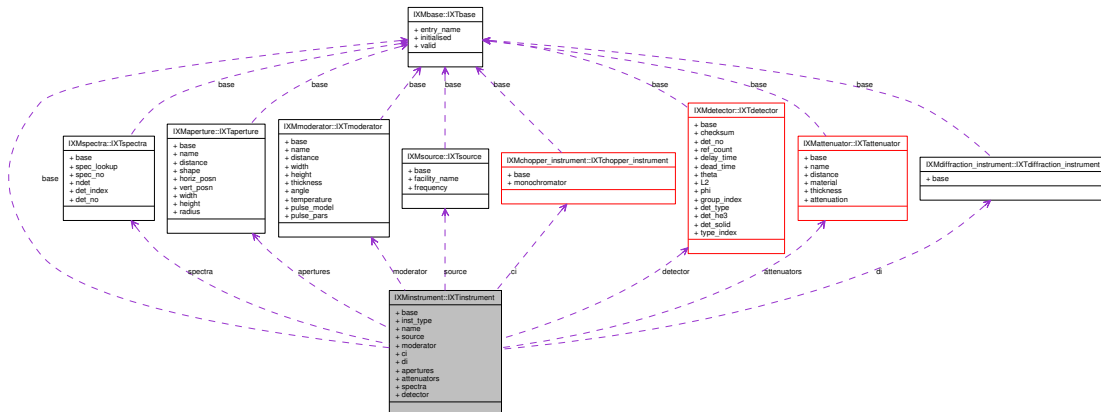
Definition at line 23 of file IXMinput\_source.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMinput\_source.f90

## 6.226 IXMinstrument::IXTinstrument Struct Reference

Collaboration diagram for IXMinstrument::IXTinstrument:



### Public Attributes

- `type(IXTbase)` base
- `integer(i4b)` inst\_type = -1
- `character(len=long_len)` name = 'name'
- `type(IXTsource)` source
- `type(IXTmoderator)` moderator
- `type(IXTchopper_instrument)` ci
- `type(IXTdiffracton_instrument)` di
- `type(IXTaperure)`, `dimension(:)`, allocatable apertures
- `type(IXTattenuator)`, `dimension(:)`, allocatable attenuators
- `type(IXTspectra)` spectra
- `type(IXTdetector)` detector

### 6.226.1 Detailed Description

Definition at line 22 of file IXMinstrument.f90.

### 6.226.2 Member Data Documentation

#### 6.226.2.1 `type(IXTbase)` IXMinstrument::IXTinstrument::base

Definition at line 24 of file IXMinstrument.f90.

#### 6.226.2.2 `integer(i4b)` IXMinstrument::IXTinstrument::inst\_type = -1

Definition at line 29 of file IXMinstrument.f90.

**6.226.2.3** `character(len=long_len) IXMinstrument::IXTinstrument::name = 'name'`

Definition at line 30 of file IXMinstrument.f90.

**6.226.2.4** `type(IXTsource) IXMinstrument::IXTinstrument::source`

Definition at line 31 of file IXMinstrument.f90.

**6.226.2.5** `type(IXTmoderator) IXMinstrument::IXTinstrument::moderator`

Definition at line 32 of file IXMinstrument.f90.

**6.226.2.6** `type(IXTchopper_instrument) IXMinstrument::IXTinstrument::ci`

Definition at line 39 of file IXMinstrument.f90.

**6.226.2.7** `type(IXTdiffraction_instrument) IXMinstrument::IXTinstrument::di`

Definition at line 40 of file IXMinstrument.f90.

**6.226.2.8** `type(IXTaperture),dimension(:),allocatable IXMinstrument::IXTinstrument::apertures`

Definition at line 44 of file IXMinstrument.f90.

**6.226.2.9** `type(IXTattenuator),dimension(:),allocatable IXMinstrument::IXTinstrument::attenuators`

Definition at line 47 of file IXMinstrument.f90.

**6.226.2.10** `type(IXTspectra) IXMinstrument::IXTinstrument::spectra`

Definition at line 51 of file IXMinstrument.f90.

**6.226.2.11** `type(IXTdetector) IXMinstrument::IXTinstrument::detector`

Definition at line 52 of file IXMinstrument.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMinstrument.f90

## 6.227 IXMisis\_raw\_file::IXTisis\_raw\_file Struct Reference

### Public Attributes

- `character(len=256) runid`
- `logical found`
- `integer ntc1`
- `integer nsp1`
- `integer ndet`
- `integer nper`
- `integer nmon`
- `integer nuse`

### 6.227.1 Detailed Description

Definition at line 30 of file IXMisis\_raw\_file.f90.

### 6.227.2 Member Data Documentation

#### 6.227.2.1 `character(len=256) IXMisis_raw_file::IXTisis_raw_file::runid`

Definition at line 32 of file IXMisis\_raw\_file.f90.

#### 6.227.2.2 `logical IXMisis_raw_file::IXTisis_raw_file::found`

Definition at line 33 of file IXMisis\_raw\_file.f90.

#### 6.227.2.3 `integer IXMisis_raw_file::IXTisis_raw_file::ntc1`

Definition at line 34 of file IXMisis\_raw\_file.f90.

#### 6.227.2.4 `integer IXMisis_raw_file::IXTisis_raw_file::nsp1`

Definition at line 35 of file IXMisis\_raw\_file.f90.

#### 6.227.2.5 `integer IXMisis_raw_file::IXTisis_raw_file::ndet`

Definition at line 36 of file IXMisis\_raw\_file.f90.

#### 6.227.2.6 `integer IXMisis_raw_file::IXTisis_raw_file::nper`

Definition at line 37 of file IXMisis\_raw\_file.f90.

#### 6.227.2.7 `integer IXMisis_raw_file::IXTisis_raw_file::nmon`

Definition at line 38 of file IXMisis\_raw\_file.f90.

**6.227.2.8 integer IXMisis\_raw\_file::IXTisis\_raw\_file::nuse**

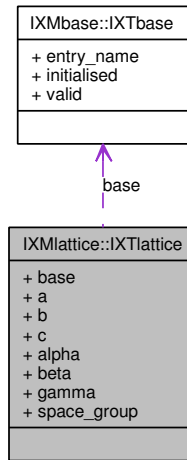
Definition at line 39 of file IXMisis\_raw\_file.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMisis\_raw\_file.f90

## 6.228 IXMlattice::IXTlattice Struct Reference

Collaboration diagram for IXMlattice::IXTlattice:



### Public Attributes

- `type(IXTbase) base`
- `real(dp) a = 0.0_dp`
- `real(dp) b = 0.0_dp`
- `real(dp) c = 0.0_dp`
- `real(dp) alpha = 0.0_dp`
- `real(dp) beta = 0.0_dp`
- `real(dp) gamma = 0.0_dp`
- `character(len=long_len) space_group = 'space_group'`

### 6.228.1 Detailed Description

Definition at line 12 of file IXMlattice.f90.

### 6.228.2 Member Data Documentation

#### 6.228.2.1 `type(IXTbase) IXMlattice::IXTlattice::base`

Definition at line 14 of file IXMlattice.f90.

#### 6.228.2.2 `real(dp) IXMlattice::IXTlattice::a = 0.0_dp`

Definition at line 15 of file IXMlattice.f90.

#### 6.228.2.3 `real(dp) IXMlattice::IXTlattice::b = 0.0_dp`

Definition at line 16 of file IXMlattice.f90.



**6.228.2.4** `real(dp) IXMlattice::IXTlattice::c = 0.0_dp`

Definition at line 17 of file IXMlattice.f90.

**6.228.2.5** `real(dp) IXMlattice::IXTlattice::alpha = 0.0_dp`

Definition at line 18 of file IXMlattice.f90.

**6.228.2.6** `real(dp) IXMlattice::IXTlattice::beta = 0.0_dp`

Definition at line 19 of file IXMlattice.f90.

**6.228.2.7** `real(dp) IXMlattice::IXTlattice::gamma = 0.0_dp`

Definition at line 20 of file IXMlattice.f90.

**6.228.2.8** `character(len=long_len) IXMlattice::IXTlattice::space_group =  
'space_group'`

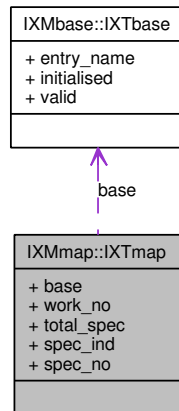
Definition at line 21 of file IXMlattice.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMlattice.f90`

## 6.229 IXMmap::IXTmap Struct Reference

Collaboration diagram for IXMmap::IXTmap:



### Public Attributes

- `type(IXTbase) base`
- `integer(i4b), dimension(:), pointer work_no = >NULL()`
- `integer(i4b), dimension(:), pointer total_spec = >NULL()`
- `integer(i4b), dimension(:), pointer spec_ind = >NULL()`
- `integer(i4b), dimension(:), pointer spec_no = >NULL()`

### 6.229.1 Detailed Description

Definition at line 15 of file IXMmap.f90.

### 6.229.2 Member Data Documentation

#### 6.229.2.1 `type(IXTbase) IXMmap::IXTmap::base`

Definition at line 18 of file IXMmap.f90.

#### 6.229.2.2 `integer(i4b),dimension(:),pointer IXMmap::IXTmap::work_no = >NULL()`

Definition at line 19 of file IXMmap.f90.

#### 6.229.2.3 `integer(i4b),dimension(:),pointer IXMmap::IXTmap::total_spec = >NULL()`

Definition at line 20 of file IXMmap.f90.

**6.229.2.4** `integer(i4b),dimension(:),pointer IXMmap::IXTmap::spec__ind =>NULL()`

Definition at line 21 of file IXMmap.f90.

**6.229.2.5** `integer(i4b),dimension(:),pointer IXMmap::IXTmap::spec__no =>NULL()`

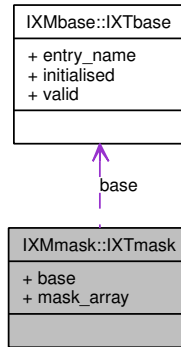
Definition at line 22 of file IXMmap.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMmap.f90`

## 6.230 IXMmask::IXTmask Struct Reference

Collaboration diagram for IXMmask::IXTmask:



### Public Attributes

- `type(IXTbase) base`
- `integer(i4b), dimension(:), pointer mask_array = >NULL()`

#### 6.230.1 Detailed Description

Definition at line 19 of file IXMmask.f90.

#### 6.230.2 Member Data Documentation

##### 6.230.2.1 `type(IXTbase) IXMmask::IXTmask::base`

Definition at line 21 of file IXMmask.f90.

##### 6.230.2.2 `integer(i4b),dimension(:),pointer IXMmask::IXTmask::mask_array = >NULL()`

Definition at line 22 of file IXMmask.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMmask.f90`

## 6.231 IXMmemory::IXTmemory\_info Struct Reference

### Public Attributes

- logical `fortran_alloc` = `.false.`
- integer(`cpointer_t`) `external_ptr` = `0`

#### 6.231.1 Detailed Description

Definition at line 19 of file IXMmemory.f90.

#### 6.231.2 Member Data Documentation

##### 6.231.2.1 logical IXMmemory::IXTmemory\_info::fortran\_alloc = .false.

Definition at line 20 of file IXMmemory.f90.

##### 6.231.2.2 integer(`cpointer_t`) IXMmemory::IXTmemory\_info::external\_ptr = 0

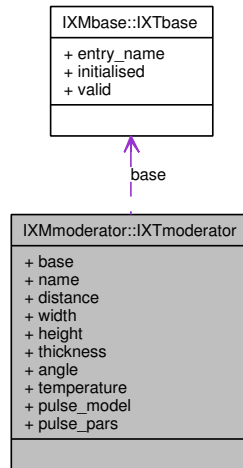
Definition at line 21 of file IXMmemory.f90.

The documentation for this struct was generated from the following file:

- `libcore/IXMmemory.f90`

## 6.232 IXMmoderator::IXTmoderator Struct Reference

Collaboration diagram for IXMmoderator::IXTmoderator:



### Public Attributes

- `type(IXTbase) base`
- `character(len=long_len) name = 'name'`
- `real(dp) distance = 0.0_dp`
- `real(dp) width = 0.0_dp`
- `real(dp) height = 0.0_dp`
- `real(dp) thickness = 0.0_dp`
- `real(dp) angle = 0.0_dp`
- `real(dp) temperature = 0.0_dp`
- `character(len=short_len) pulse_model = 'model'`
- `real(dp), dimension(:), pointer pulse_pars = >NULL()`

#### 6.232.1 Detailed Description

Definition at line 14 of file IXMmoderator.f90.

#### 6.232.2 Member Data Documentation

##### 6.232.2.1 `type(IXTbase) IXMmoderator::IXTmoderator::base`

Definition at line 16 of file IXMmoderator.f90.

##### 6.232.2.2 `character(len=long_len) IXMmoderator::IXTmoderator::name = 'name'`

Definition at line 17 of file IXMmoderator.f90.

**6.232.2.3** `real(dp) IXMmoderator::IXTmoderator::distance = 0.0_dp`

Definition at line 18 of file IXMmoderator.f90.

**6.232.2.4** `real(dp) IXMmoderator::IXTmoderator::width = 0.0_dp`

Definition at line 19 of file IXMmoderator.f90.

**6.232.2.5** `real(dp) IXMmoderator::IXTmoderator::height = 0.0_dp`

Definition at line 20 of file IXMmoderator.f90.

**6.232.2.6** `real(dp) IXMmoderator::IXTmoderator::thickness = 0.0_dp`

Definition at line 21 of file IXMmoderator.f90.

**6.232.2.7** `real(dp) IXMmoderator::IXTmoderator::angle = 0.0_dp`

Definition at line 22 of file IXMmoderator.f90.

**6.232.2.8** `real(dp) IXMmoderator::IXTmoderator::temperature = 0.0_dp`

Definition at line 23 of file IXMmoderator.f90.

**6.232.2.9** `character(len=short_len) IXMmoderator::IXTmoderator::pulse_model = 'model'`

Definition at line 24 of file IXMmoderator.f90.

**6.232.2.10** `real(dp),dimension(:),pointer IXMmoderator::IXTmoderator::pulse_pars = >NULL()`

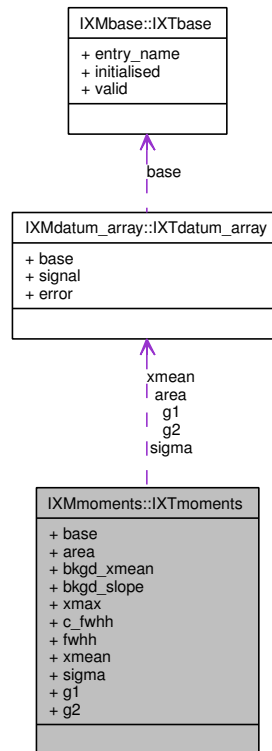
Definition at line 25 of file IXMmoderator.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMmoderator.f90

## 6.233 IXMmoments::IXTmoments Struct Reference

Collaboration diagram for IXMmoments::IXTmoments:



### Public Attributes

- type(IXTbase) **base**
- type(IXTdatum\_array) **area**
- real(dp), dimension(:), pointer **bkgd\_xmean** = >NULL()
- real(dp), dimension(:), pointer **bkgd\_slope** = >NULL()
- real(dp), dimension(:), pointer **xmax** = >NULL()
- real(dp), dimension(:), pointer **c\_fwhh** = >NULL()
- real(dp), dimension(:), pointer **fwhh** = >NULL()
- type(IXTdatum\_array) **xmean**
- type(IXTdatum\_array) **sigma**
- type(IXTdatum\_array) **g1**
- type(IXTdatum\_array) **g2**

### 6.233.1 Detailed Description

Definition at line 22 of file IXMmoments.f90.



## 6.233.2 Member Data Documentation

### 6.233.2.1 type(IXTbase) IXMmoments::IXTmoments::base

Definition at line 24 of file IXMmoments.f90.

### 6.233.2.2 type(IXTdatum\_array) IXMmoments::IXTmoments::area

Definition at line 25 of file IXMmoments.f90.

### 6.233.2.3 real(dp),dimension(:),pointer IXMmoments::IXTmoments::bkgd\_xmean = >NULL()

Definition at line 26 of file IXMmoments.f90.

### 6.233.2.4 real(dp),dimension(:),pointer IXMmoments::IXTmoments::bkgd\_slope = >NULL()

Definition at line 27 of file IXMmoments.f90.

### 6.233.2.5 real(dp),dimension(:),pointer IXMmoments::IXTmoments::xmax = >NULL()

Definition at line 28 of file IXMmoments.f90.

### 6.233.2.6 real(dp),dimension(:),pointer IXMmoments::IXTmoments::c\_fwhh = >NULL()

Definition at line 29 of file IXMmoments.f90.

### 6.233.2.7 real(dp),dimension(:),pointer IXMmoments::IXTmoments::fwhh = >NULL()

Definition at line 30 of file IXMmoments.f90.

### 6.233.2.8 type(IXTdatum\_array) IXMmoments::IXTmoments::xmean

Definition at line 31 of file IXMmoments.f90.

### 6.233.2.9 type(IXTdatum\_array) IXMmoments::IXTmoments::sigma

Definition at line 32 of file IXMmoments.f90.

### 6.233.2.10 type(IXTdatum\_array) IXMmoments::IXTmoments::g1

Definition at line 33 of file IXMmoments.f90.

**6.233.2.11** `type(IXTdatum_array) IXMmoments::IXTmoments::g2`

Definition at line 34 of file IXMmoments.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMmoments.f90`

## 6.234 IXMoperation::IXTop\_display Struct Reference

### Public Attributes

- `character(len=256) name`

#### 6.234.1 Detailed Description

Definition at line 26 of file IXMoperation.f90.

#### 6.234.2 Member Data Documentation

##### 6.234.2.1 `character(len=256) IXMoperation::IXTop_display::name`

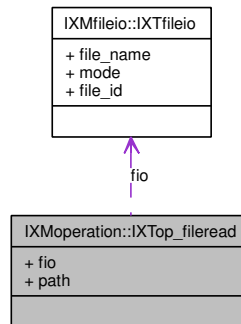
Definition at line 27 of file IXMoperation.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMoperation.f90`

## 6.235 IXMoperation::IXTop\_fileread Struct Reference

Collaboration diagram for IXMoperation::IXTop\_fileread:



### Public Attributes

- `type(IXTfileio) fio`
- `character(len=256) path`

### 6.235.1 Detailed Description

Definition at line 44 of file `IXMoperation.f90`.

### 6.235.2 Member Data Documentation

#### 6.235.2.1 `type(IXTfileio) IXMoperation::IXTop_fileread::fio`

Definition at line 45 of file `IXMoperation.f90`.

#### 6.235.2.2 `character(len=256) IXMoperation::IXTop_fileread::path`

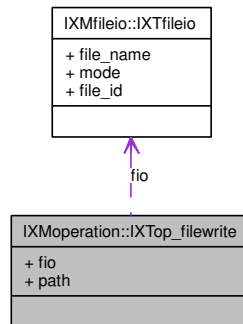
Definition at line 46 of file `IXMoperation.f90`.

The documentation for this struct was generated from the following file:

- `libclasses/IXMoperation.f90`

## 6.236 IXMoperation::IXTop\_filewrite Struct Reference

Collaboration diagram for IXMoperation::IXTop\_filewrite:



### Public Attributes

- `type(IXTfileio) fio`
- `character(len=256) path`

### 6.236.1 Detailed Description

Definition at line 48 of file `IXMoperation.f90`.

### 6.236.2 Member Data Documentation

#### 6.236.2.1 `type(IXTfileio) IXMoperation::IXTop_filewrite::fio`

Definition at line 49 of file `IXMoperation.f90`.

#### 6.236.2.2 `character(len=256) IXMoperation::IXTop_filewrite::path`

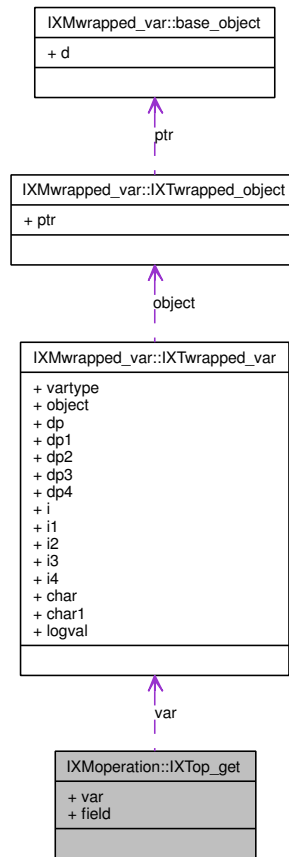
Definition at line 50 of file `IXMoperation.f90`.

The documentation for this struct was generated from the following file:

- `libclasses/IXMoperation.f90`

## 6.237 IXMoperation::IXTop\_get Struct Reference

Collaboration diagram for IXMoperation::IXTop\_get:



### Public Attributes

- `type(IXTrapped_var)`, pointer `var = > NULL()`
- `character(len=256)` field

### 6.237.1 Detailed Description

Definition at line 36 of file IXMoperation.f90.

### 6.237.2 Member Data Documentation

#### 6.237.2.1 `type(IXTrapped_var)`, pointer `IXMoperation::IXTop_get::var = > NULL()`

Definition at line 37 of file IXMoperation.f90.

**6.237.2.2 character(len=256) IXMoperation::IXTop\_get::field**

Definition at line 38 of file IXMoperation.f90.

The documentation for this struct was generated from the following file:

- libclasses/**IXMoperation.f90**

## 6.238 IXMoperation::IXTop\_init Struct Reference

### Public Attributes

- integer(i4b) i

### 6.238.1 Detailed Description

Definition at line 52 of file IXMoperation.f90.

### 6.238.2 Member Data Documentation

#### 6.238.2.1 integer(i4b) IXMoperation::IXTop\_init::i

Definition at line 53 of file IXMoperation.f90.

The documentation for this struct was generated from the following file:

- libclasses/**IXMoperation.f90**



## 6.239 IXMoperation::IXTop\_matlabread Struct Reference

### Public Attributes

- integer(cpointer\_t), dimension(10) **prhs**

### 6.239.1 Detailed Description

Definition at line 29 of file IXMoperation.f90.

### 6.239.2 Member Data Documentation

#### 6.239.2.1 integer(cpointer\_t),dimension(10) IXMoperation::IXTop\_matlabread::prhs

Definition at line 30 of file IXMoperation.f90.

The documentation for this struct was generated from the following file:

- libclasses/**IXMoperation.f90**

## 6.240 IXMoperation::IXTop\_matlabwrite Struct Reference

### Public Attributes

- `integer(cpointer_t), dimension(10) plhs`
- `integer(cpointer_t) prhs = 0`

### 6.240.1 Detailed Description

Definition at line 32 of file IXMoperation.f90.

### 6.240.2 Member Data Documentation

#### 6.240.2.1 `integer(cpointer_t),dimension(10) IXMoperation::IXTop_matlabwrite::plhs`

Definition at line 33 of file IXMoperation.f90.

#### 6.240.2.2 `integer(cpointer_t) IXMoperation::IXTop_matlabwrite::prhs = 0`

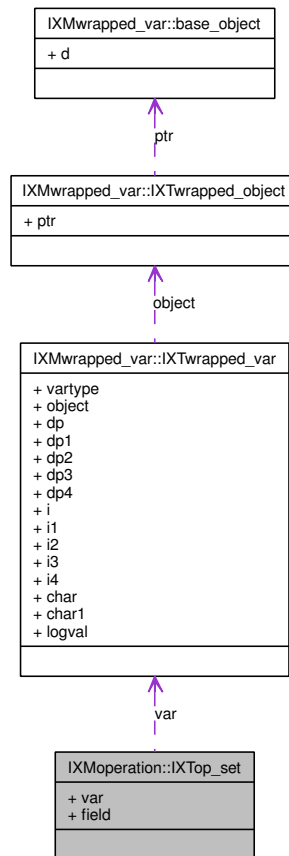
Definition at line 34 of file IXMoperation.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMoperation.f90`

## 6.241 IXMoperation::IXTop\_set Struct Reference

Collaboration diagram for IXMoperation::IXTop\_set:



### Public Attributes

- `type(IXTrapped_var) var`
- `character(len=256) field`

### 6.241.1 Detailed Description

Definition at line 40 of file IXMoperation.f90.

### 6.241.2 Member Data Documentation

#### 6.241.2.1 `type(IXTrapped_var) IXMoperation::IXTop_set::var`

Definition at line 41 of file IXMoperation.f90.

**6.241.2.2 character(len=256) IXMoperation::IXTop\_set::field**

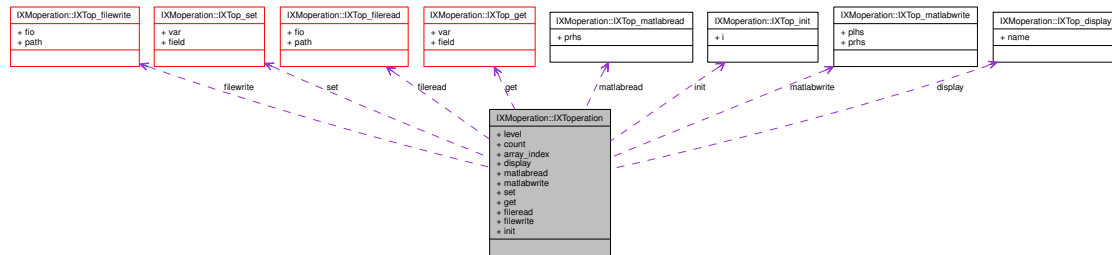
Definition at line 42 of file IXMoperation.f90.

The documentation for this struct was generated from the following file:

- libclasses/**IXMoperation.f90**

## 6.242 IXMoperation::IXToperation Struct Reference

Collaboration diagram for IXMoperation::IXToperation:



### Public Attributes

- integer `level = 0`
- integer, dimension(10) `count`
- integer, dimension(10) `array_index`
- type(`IXTop_display`), pointer `display = > NULL()`
- type(`IXTop_matlabread`), pointer `matlabread = > NULL()`
- type(`IXTop_matlabwrite`), pointer `matlabwrite = > NULL()`
- type(`IXTop_set`), pointer `set = > NULL()`
- type(`IXTop_get`), pointer `get = > NULL()`
- type(`IXTop_fileread`), pointer `fileread = > NULL()`
- type(`IXTop_filewrite`), pointer `filewrite = > NULL()`
- type(`IXTop_init`), pointer `init = > NULL()`

### 6.242.1 Detailed Description

Definition at line 64 of file `IXMoperation.f90`.

### 6.242.2 Member Data Documentation

#### 6.242.2.1 integer IXMoperation::IXToperation::level = 0

Definition at line 65 of file `IXMoperation.f90`.

#### 6.242.2.2 integer,dimension(10) IXMoperation::IXToperation::count

Definition at line 66 of file `IXMoperation.f90`.

#### 6.242.2.3 integer,dimension(10) IXMoperation::IXToperation::array\_index

Definition at line 67 of file `IXMoperation.f90`.

**6.242.2.4** `type(IXTop_display),pointer IXMoperation::IXToperation::display = > NULL()`

Definition at line 68 of file IXMoperation.f90.

**6.242.2.5** `type(IXTop_matlabread),pointer IXMoperation::IXToperation::matlabread = > NULL()`

Definition at line 69 of file IXMoperation.f90.

**6.242.2.6** `type(IXTop_matlabwrite),pointer IXMoperation::IXToperation::matlabwrite = > NULL()`

Definition at line 70 of file IXMoperation.f90.

**6.242.2.7** `type(IXTop_set),pointer IXMoperation::IXToperation::set = > NULL()`

Definition at line 71 of file IXMoperation.f90.

**6.242.2.8** `type(IXTop_get),pointer IXMoperation::IXToperation::get = > NULL()`

Definition at line 72 of file IXMoperation.f90.

**6.242.2.9** `type(IXTop_fileread),pointer IXMoperation::IXToperation::fileread = > NULL()`

Definition at line 73 of file IXMoperation.f90.

**6.242.2.10** `type(IXTop_filewrite),pointer IXMoperation::IXToperation::filewrite = > NULL()`

Definition at line 74 of file IXMoperation.f90.

**6.242.2.11** `type(IXTop_init),pointer IXMoperation::IXToperation::init = > NULL()`

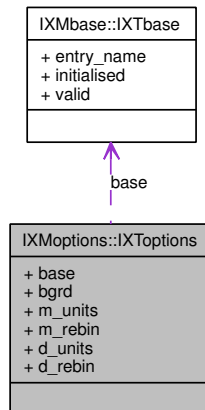
Definition at line 75 of file IXMoperation.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMoperation.f90`

## 6.243 IXMoptions::IXToptions Struct Reference

Collaboration diagram for IXMoptions::IXToptions:



### Public Attributes

- `type(IXTbase) base`
- `logical bgrd`
- `logical m_units`
- `logical m_rebin`
- `logical d_units`
- `logical d_rebin`

#### 6.243.1 Detailed Description

Definition at line 14 of file IXMoptions.f90.

#### 6.243.2 Member Data Documentation

##### 6.243.2.1 `type(IXTbase) IXMoptions::IXToptions::base`

Definition at line 16 of file IXMoptions.f90.

##### 6.243.2.2 `logical IXMoptions::IXToptions::bgrd`

Definition at line 17 of file IXMoptions.f90.

##### 6.243.2.3 `logical IXMoptions::IXToptions::m_units`

Definition at line 18 of file IXMoptions.f90.

##### 6.243.2.4 `logical IXMoptions::IXToptions::m_rebin`

Definition at line 19 of file IXMoptions.f90.

**6.243.2.5 logical IXMoptions::IXToptions::d\_units**

Definition at line 20 of file IXMoptions.f90.

**6.243.2.6 logical IXMoptions::IXToptions::d\_rebin**

Definition at line 21 of file IXMoptions.f90.

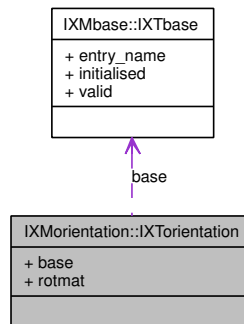
The documentation for this struct was generated from the following file:

- libclasses/**IXMoptions.f90**



## 6.244 IXMorientation::IXTorientation Struct Reference

Collaboration diagram for IXMorientation::IXTorientation:



### Public Attributes

- `type(IXTbase) base`
- `real(dp), dimension(3, 3) rotmat = 0.0_dp`

### 6.244.1 Detailed Description

Definition at line 40 of file IXMorientation.f90.

### 6.244.2 Member Data Documentation

#### 6.244.2.1 `type(IXTbase) IXMorientation::IXTorientation::base`

Definition at line 42 of file IXMorientation.f90.

#### 6.244.2.2 `real(dp),dimension(3,3) IXMorientation::IXTorientation::rotmat = 0.0_dp`

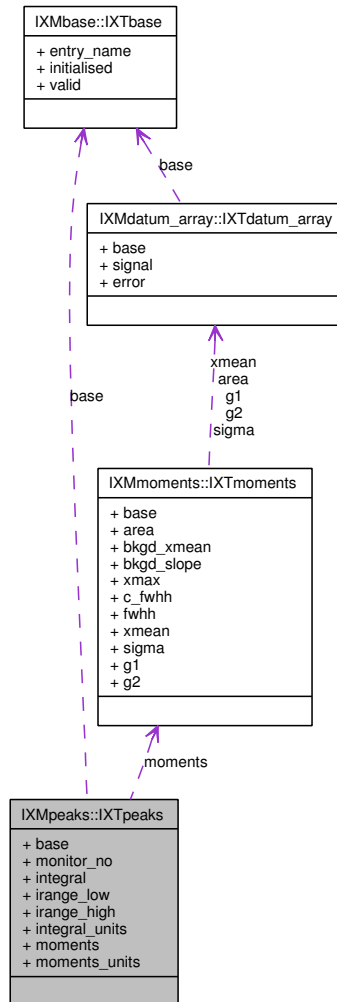
Definition at line 43 of file IXMorientation.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMorientation.f90`

## 6.245 IXMpeaks::IXTpeaks Struct Reference

Collaboration diagram for IXMpeaks::IXTpeaks:



### Public Attributes

- `type(IXTbase) base`
- `integer(i4b), dimension(:), pointer monitor_no = >NULL()`
- `type(IXTdatum_array) integral`
- `real(dp), dimension(:), pointer irange_low = >NULL()`
- `real(dp), dimension(:), pointer irange_high = >NULL()`
- `character(len=short_len) integral_units = 'units'`
- `type(IXTmoments) moments`
- `character(len=short_len) moments_units = 'units'`

### 6.245.1 Detailed Description

Definition at line 15 of file `IXMpeaks.f90`.

## 6.245.2 Member Data Documentation

### 6.245.2.1 `type(IXTbase) IXMpeaks::IXTpeaks::base`

Definition at line 17 of file IXMpeaks.f90.

### 6.245.2.2 `integer(i4b),dimension(:),pointer IXMpeaks::IXTpeaks::monitor_no =>NULL()`

Definition at line 18 of file IXMpeaks.f90.

### 6.245.2.3 `type(IXTdatum_array) IXMpeaks::IXTpeaks::integral`

Definition at line 19 of file IXMpeaks.f90.

### 6.245.2.4 `real(dp),dimension(:),pointer IXMpeaks::IXTpeaks::irange_low =>NULL()`

Definition at line 20 of file IXMpeaks.f90.

### 6.245.2.5 `real(dp),dimension(:),pointer IXMpeaks::IXTpeaks::irange_high =>NULL()`

Definition at line 21 of file IXMpeaks.f90.

### 6.245.2.6 `character(len=short_len) IXMpeaks::IXTpeaks::integral_units = 'units'`

Definition at line 23 of file IXMpeaks.f90.

### 6.245.2.7 `type(IXTmoments) IXMpeaks::IXTpeaks::moments`

Definition at line 24 of file IXMpeaks.f90.

### 6.245.2.8 `character(len=short_len) IXMpeaks::IXTpeaks::moments_units = 'units'`

Definition at line 25 of file IXMpeaks.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMpeaks.f90`

## 6.246 IXMpointer\_to\_array::IXTpointer\_to\_array Struct Reference

### Public Attributes

- `real(dp), dimension(:), pointer x`

### 6.246.1 Detailed Description

Definition at line 21 of file IXMpointer\_to\_array.f90.

### 6.246.2 Member Data Documentation

#### 6.246.2.1 `real(dp),dimension(:),pointer IXMpointer_to_array::IXTpointer_to_array::x`

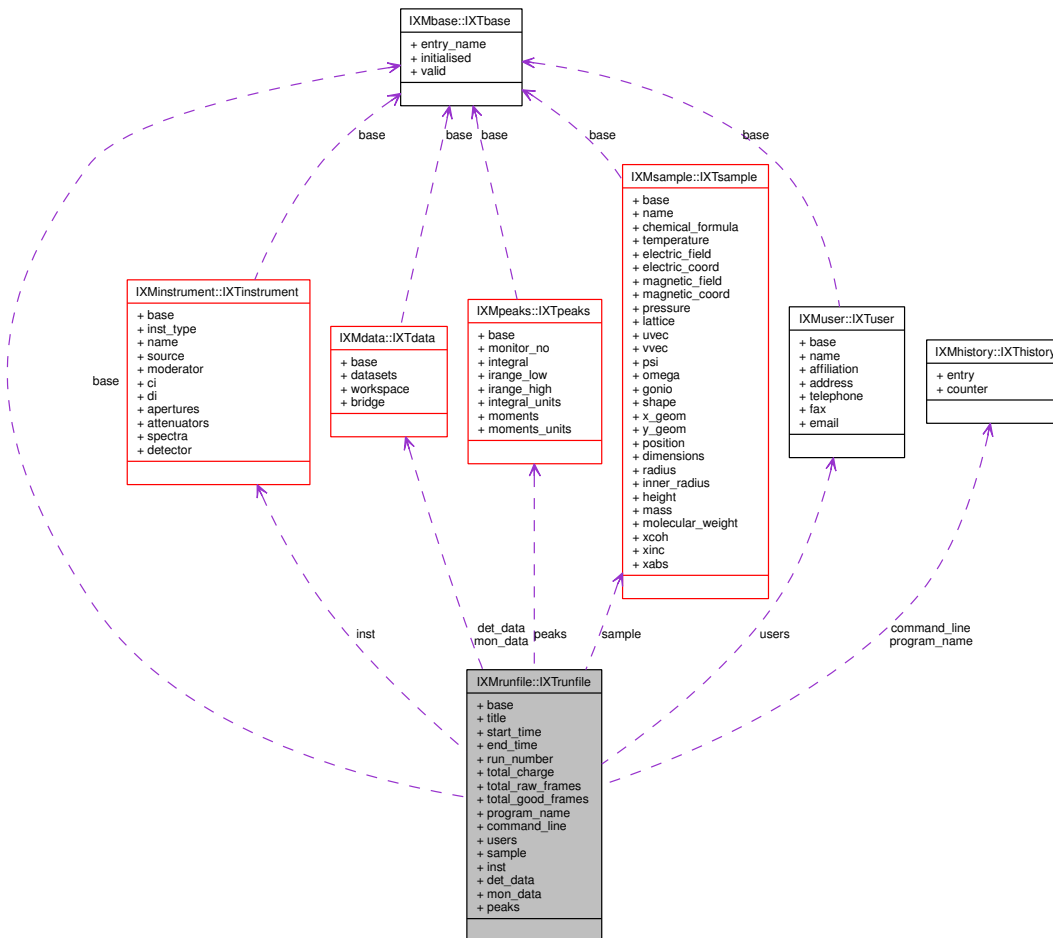
Definition at line 22 of file IXMpointer\_to\_array.f90.

The documentation for this struct was generated from the following file:

- `libcore/IXMpointer_to_array.f90`

## 6.247 IXMrunfile::IXTrunfile Struct Reference

Collaboration diagram for IXMrunfile::IXTrunfile:



## Public Attributes

- type(IXTbase) base
- character(len=long\_len) title = 'title'
- character(len=short\_len) start\_time
- character(len=short\_len) end\_time
- integer(i4b) run\_number
- real(dp) total\_charge
- integer(i4b) total\_raw\_frames
- integer(i4b) total\_good\_frames
- type(IXThistory) program\_name
- type(IXThistory) command\_line
- type(IXTuser), dimension(:), allocatable users
- type(IXTsample) sample
- type(IXTinstrument) inst
- type(IXTdata) det\_data

- `type(IXTdata) mon_data`
- `type(IXTpeaks) peaks`

### 6.247.1 Detailed Description

Definition at line 19 of file IXMrunfile.f90.

### 6.247.2 Member Data Documentation

#### 6.247.2.1 `type(IXTbase) IXMrunfile::IXTrunfile::base`

Definition at line 21 of file IXMrunfile.f90.

#### 6.247.2.2 `character(len=long_len) IXMrunfile::IXTrunfile::title = 'title'`

Definition at line 23 of file IXMrunfile.f90.

#### 6.247.2.3 `character(len=short_len) IXMrunfile::IXTrunfile::start_time`

Definition at line 26 of file IXMrunfile.f90.

#### 6.247.2.4 `character(len=short_len) IXMrunfile::IXTrunfile::end_time`

Definition at line 27 of file IXMrunfile.f90.

#### 6.247.2.5 `integer(i4b) IXMrunfile::IXTrunfile::run_number`

Definition at line 28 of file IXMrunfile.f90.

#### 6.247.2.6 `real(dp) IXMrunfile::IXTrunfile::total_charge`

Definition at line 29 of file IXMrunfile.f90.

#### 6.247.2.7 `integer(i4b) IXMrunfile::IXTrunfile::total_raw_frames`

Definition at line 30 of file IXMrunfile.f90.

#### 6.247.2.8 `integer(i4b) IXMrunfile::IXTrunfile::total_good_frames`

Definition at line 31 of file IXMrunfile.f90.

#### 6.247.2.9 `type(IXThistory) IXMrunfile::IXTrunfile::program_name`

Definition at line 32 of file IXMrunfile.f90.

**6.247.2.10** type(IXThistory) IXMrunfile::IXTrunfile::command\_line

Definition at line 33 of file IXMrunfile.f90.

**6.247.2.11** type(IXTuser),dimension(:),allocatable IXMrunfile::IXTrunfile::users

Definition at line 34 of file IXMrunfile.f90.

**6.247.2.12** type(IXTsample) IXMrunfile::IXTrunfile::sample

Definition at line 35 of file IXMrunfile.f90.

**6.247.2.13** type(IXTinstrument) IXMrunfile::IXTrunfile::inst

Definition at line 36 of file IXMrunfile.f90.

**6.247.2.14** type(IXTdata) IXMrunfile::IXTrunfile::det\_data

Definition at line 37 of file IXMrunfile.f90.

**6.247.2.15** type(IXTdata) IXMrunfile::IXTrunfile::mon\_data

Definition at line 38 of file IXMrunfile.f90.

**6.247.2.16** type(IXTpeaks) IXMrunfile::IXTrunfile::peaks

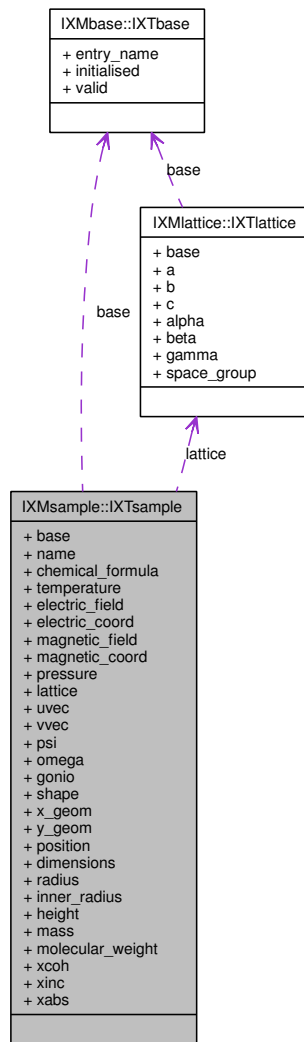
Definition at line 39 of file IXMrunfile.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMrunfile.f90

## 6.248 IXMsample::IXTsample Struct Reference

Collaboration diagram for IXMsample::IXTsample:



### Public Attributes

- `type(IXTbase)` base
- `character(len=long_len)` name = 'name'
- `character(len=long_len)` chemical\_formula = 'formula'
- `real(dp)` temperature = 0.0\_dp
- `real(dp), dimension(3)` electric\_field = 0.0\_dp
- `character(len=short_len)` electric\_coord = 'coord'
- `real(dp), dimension(3)` magnetic\_field = 0.0\_dp
- `character(len=short_len)` magnetic\_coord = 'coord'
- `real(dp)` pressure = 0.0\_dp
- `type(IXTlattice)` lattice
- `real(dp), dimension(3)` uvec = 0.0\_dp



- `real(dp), dimension(3) vvec = 0.0_dp`
- `real(dp) psi = 0.0_dp`
- `real(dp) omega = 0.0_dp`
- `real(dp), dimension(3) gonio = 0.0_dp`
- `character(len=short_len) shape = 'shape'`
- `real(dp), dimension(3) x_geom = 0.0_dp`
- `real(dp), dimension(3) y_geom = 0.0_dp`
- `real(dp), dimension(3) position = 0.0_dp`
- `real(dp), dimension(3) dimensions = 0.0_dp`
- `real(dp) radius = 0.0_dp`
- `real(dp) inner_radius = 0.0_dp`
- `real(dp) height = 0.0_dp`
- `real(dp) mass = 0.0_dp`
- `real(dp) molecular_weight = 0.0_dp`
- `real(dp) xcoh = 0.0_dp`
- `real(dp) xinc = 0.0_dp`
- `real(dp) xabs = 0.0_dp`

### 6.248.1 Detailed Description

Definition at line 7 of file IXMsample.f90.

### 6.248.2 Member Data Documentation

#### 6.248.2.1 `type(IXTbase) IXMsample::IXTsample::base`

Definition at line 9 of file IXMsample.f90.

#### 6.248.2.2 `character(len=long_len) IXMsample::IXTsample::name = 'name'`

Definition at line 10 of file IXMsample.f90.

#### 6.248.2.3 `character(len=long_len) IXMsample::IXTsample::chemical_formula = 'formula'`

Definition at line 11 of file IXMsample.f90.

#### 6.248.2.4 `real(dp) IXMsample::IXTsample::temperature = 0.0_dp`

Definition at line 12 of file IXMsample.f90.

#### 6.248.2.5 `real(dp),dimension(3) IXMsample::IXTsample::electric_field = 0.0_dp`

Definition at line 13 of file IXMsample.f90.

#### 6.248.2.6 `character(len=short_len) IXMsample::IXTsample::electric_coord = 'coord'`

Definition at line 14 of file IXMsample.f90.

**6.248.2.7** `real(dp),dimension(3) IXMsample::IXTsample::magnetic_field = 0.0_dp`

Definition at line 15 of file IXMsample.f90.

**6.248.2.8** `character(len=short_len) IXMsample::IXTsample::magnetic_coord = 'coord'`

Definition at line 16 of file IXMsample.f90.

**6.248.2.9** `real(dp) IXMsample::IXTsample::pressure = 0.0_dp`

Definition at line 17 of file IXMsample.f90.

**6.248.2.10** `type(IXTlattice) IXMsample::IXTsample::lattice`

Definition at line 19 of file IXMsample.f90.

**6.248.2.11** `real(dp),dimension(3) IXMsample::IXTsample::uvec = 0.0_dp`

Definition at line 24 of file IXMsample.f90.

**6.248.2.12** `real(dp),dimension(3) IXMsample::IXTsample::vvec = 0.0_dp`

Definition at line 25 of file IXMsample.f90.

**6.248.2.13** `real(dp) IXMsample::IXTsample::psi = 0.0_dp`

Definition at line 26 of file IXMsample.f90.

**6.248.2.14** `real(dp) IXMsample::IXTsample::omega = 0.0_dp`

Definition at line 29 of file IXMsample.f90.

**6.248.2.15** `real(dp),dimension(3) IXMsample::IXTsample::gonio = 0.0_dp`

Definition at line 34 of file IXMsample.f90.

**6.248.2.16** `character(len=short_len) IXMsample::IXTsample::shape = 'shape'`

Definition at line 36 of file IXMsample.f90.

**6.248.2.17** `real(dp),dimension(3) IXMsample::IXTsample::x_geom = 0.0_dp`

Definition at line 37 of file IXMsample.f90.

**6.248.2.18** `real(dp),dimension(3) IXMsample::IXTsample::y_geom = 0.0_dp`

Definition at line 38 of file IXMsample.f90.

**6.248.2.19** `real(dp),dimension(3) IXMsample::IXTsample::position = 0.0_dp`

Definition at line 41 of file IXMsample.f90.

**6.248.2.20** `real(dp),dimension(3) IXMsample::IXTsample::dimensions = 0.0_dp`

Definition at line 42 of file IXMsample.f90.

**6.248.2.21** `real(dp) IXMsample::IXTsample::radius = 0.0_dp`

Definition at line 43 of file IXMsample.f90.

**6.248.2.22** `real(dp) IXMsample::IXTsample::inner_radius = 0.0_dp`

Definition at line 44 of file IXMsample.f90.

**6.248.2.23** `real(dp) IXMsample::IXTsample::height = 0.0_dp`

Definition at line 45 of file IXMsample.f90.

**6.248.2.24** `real(dp) IXMsample::IXTsample::mass = 0.0_dp`

Definition at line 46 of file IXMsample.f90.

**6.248.2.25** `real(dp) IXMsample::IXTsample::molecular_weight = 0.0_dp`

Definition at line 47 of file IXMsample.f90.

**6.248.2.26** `real(dp) IXMsample::IXTsample::xcoh = 0.0_dp`

Definition at line 48 of file IXMsample.f90.

**6.248.2.27** `real(dp) IXMsample::IXTsample::xinc = 0.0_dp`

Definition at line 49 of file IXMsample.f90.

**6.248.2.28** `real(dp) IXMsample::IXTsample::xabs = 0.0_dp`

Definition at line 50 of file IXMsample.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMsample.f90`

## 6.249 IXMshape::IXTshape Struct Reference

### Public Attributes

- integer(i4b) type
- real(dp), dimension(:), pointer dimensions = > NULL()

### 6.249.1 Detailed Description

Definition at line 28 of file IXMshape.f90.

### 6.249.2 Member Data Documentation

#### 6.249.2.1 integer(i4b) IXMshape::IXTshape::type

Definition at line 30 of file IXMshape.f90.

#### 6.249.2.2 real(dp),dimension(:) ,pointer IXMshape::IXTshape::dimensions = > NULL()

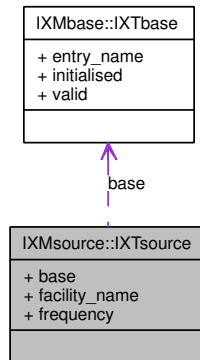
Definition at line 31 of file IXMshape.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMshape.f90

## 6.250 IXMsource::IXTsource Struct Reference

Collaboration diagram for IXMsource::IXTsource:



### Public Attributes

- `type(IXTbase) base`
- `character(len=short_len) facility_name = 'isis'`
- `real(dp) frequency = 0.0_dp`

### 6.250.1 Detailed Description

Definition at line 12 of file IXMsource.f90.

### 6.250.2 Member Data Documentation

#### 6.250.2.1 `type(IXTbase) IXMsource::IXTsource::base`

Definition at line 14 of file IXMsource.f90.

#### 6.250.2.2 `character(len=short_len) IXMsource::IXTsource::facility_name = 'isis'`

Definition at line 15 of file IXMsource.f90.

#### 6.250.2.3 `real(dp) IXMsource::IXTsource::frequency = 0.0_dp`

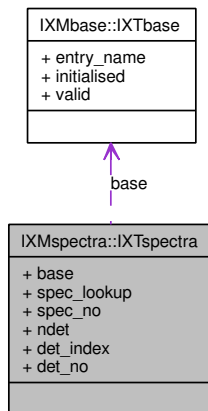
Definition at line 16 of file IXMsource.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMsource.f90`

## 6.251 IXMspectra::IXTspectra Struct Reference

Collaboration diagram for IXMspectra::IXTspectra:



### Public Attributes

- `type(IXTbase) base`
- `integer(i4b), dimension(:), pointer spec_lookup`
- `integer(i4b), dimension(:), pointer spec_no = >NULL()`
- `integer(i4b), dimension(:), pointer ndet = >NULL()`
- `integer(i4b), dimension(:), pointer det_index = >NULL()`
- `integer(i4b), dimension(:), pointer det_no = >NULL()`

#### 6.251.1 Detailed Description

Definition at line 14 of file IXMspectra.f90.

#### 6.251.2 Member Data Documentation

##### 6.251.2.1 `type(IXTbase) IXMspectra::IXTspectra::base`

Definition at line 16 of file IXMspectra.f90.

##### 6.251.2.2 `integer(i4b),dimension(:) ,pointer IXMspectra::IXTspectra::spec_lookup`

Definition at line 19 of file IXMspectra.f90.

##### 6.251.2.3 `integer(i4b),dimension(:),pointer IXMspectra::IXTspectra::spec_no = >NULL()`

Definition at line 23 of file IXMspectra.f90.

**6.251.2.4** integer(i4b),dimension(:),pointer IXMspectra::IXTspectra::ndet = >NULL()

Definition at line 26 of file IXMspectra.f90.

**6.251.2.5** integer(i4b),dimension(:),pointer IXMspectra::IXTspectra::det\_index = >NULL()

Definition at line 31 of file IXMspectra.f90.

**6.251.2.6** integer(i4b),dimension(:),pointer IXMspectra::IXTspectra::det\_no = >NULL()

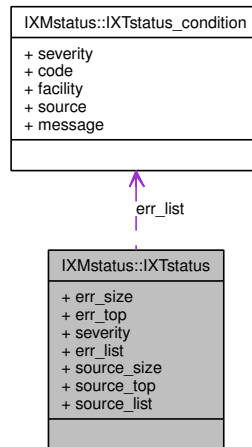
Definition at line 33 of file IXMspectra.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMspectra.f90

## 6.252 IXMstatus::IXTstatus Struct Reference

Collaboration diagram for IXMstatus::IXTstatus:



### Public Attributes

- integer `err_size = 0`
- integer `err_top = 0`
- integer `severity = IXCseverity_ok`
- `type(IXTstatus_condition), dimension(:), allocatable err_list`
- integer `source_size = 0`
- integer `source_top = 0`
- `character(len=80), dimension(:), allocatable source_list`

#### 6.252.1 Detailed Description

Definition at line 61 of file IXMstatus.f90.

#### 6.252.2 Member Data Documentation

##### 6.252.2.1 integer IXMstatus::IXTstatus::err\_size = 0

Definition at line 63 of file IXMstatus.f90.

##### 6.252.2.2 integer IXMstatus::IXTstatus::err\_top = 0

Definition at line 64 of file IXMstatus.f90.

##### 6.252.2.3 integer IXMstatus::IXTstatus::severity = IXCseverity\_ok

Definition at line 65 of file IXMstatus.f90.



**6.252.2.4** `type(IXTstatus_condition),dimension(:) ,allocatable  
IXMstatus::IXTstatus::err_list`

Definition at line 68 of file IXMstatus.f90.

**6.252.2.5** `integer IXMstatus::IXTstatus::source_size = 0`

Definition at line 69 of file IXMstatus.f90.

**6.252.2.6** `integer IXMstatus::IXTstatus::source_top = 0`

Definition at line 70 of file IXMstatus.f90.

**6.252.2.7** `character(len=80),dimension(:) ,allocatable  
IXMstatus::IXTstatus::source_list`

Definition at line 71 of file IXMstatus.f90.

The documentation for this struct was generated from the following file:

- libcore/**IXMstatus.f90**

## 6.253 IXMstatus::IXTstatus\_condition Struct Reference

### Public Attributes

- integer severity = IXCseverity\_ok
- integer code = IXCerr\_unknown
- integer facility = IXCfacility\_none
- character(len=80) source = ''
- character(len=256) message = ''

### 6.253.1 Detailed Description

Definition at line 52 of file IXMstatus.f90.

### 6.253.2 Member Data Documentation

#### 6.253.2.1 integer IXMstatus::IXTstatus\_condition::severity = IXCseverity\_ok

Definition at line 54 of file IXMstatus.f90.

#### 6.253.2.2 integer IXMstatus::IXTstatus\_condition::code = IXCerr\_unknown

Definition at line 55 of file IXMstatus.f90.

#### 6.253.2.3 integer IXMstatus::IXTstatus\_condition::facility = IXCfacility\_none

Definition at line 56 of file IXMstatus.f90.

#### 6.253.2.4 character(len=80) IXMstatus::IXTstatus\_condition::source = ''

Definition at line 57 of file IXMstatus.f90.

#### 6.253.2.5 character(len=256) IXMstatus::IXTstatus\_condition::message = ''

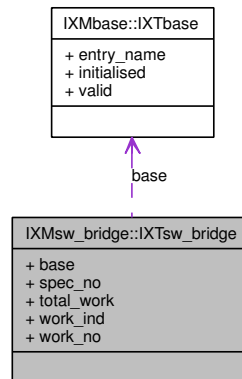
Definition at line 58 of file IXMstatus.f90.

The documentation for this struct was generated from the following file:

- libcore/IXMstatus.f90

## 6.254 IXMsw\_bridge::IXTsw\_bridge Struct Reference

Collaboration diagram for IXMsw\_bridge::IXTsw\_bridge:



### Public Attributes

- `type(IXTbase) base`
- `integer(i4b), dimension(:), pointer spec_no = >NULL()`
- `integer(i4b), dimension(:), pointer total_work = >NULL()`
- `integer(i4b), dimension(:), pointer work_ind = >NULL()`
- `integer(i4b), dimension(:), pointer work_no = >NULL()`

#### 6.254.1 Detailed Description

Definition at line 13 of file IXMsw\_bridge.f90.

#### 6.254.2 Member Data Documentation

##### 6.254.2.1 `type(IXTbase) IXMsw_bridge::IXTsw_bridge::base`

Definition at line 15 of file IXMsw\_bridge.f90.

##### 6.254.2.2 `integer(i4b),dimension(:),pointer IXMsw_bridge::IXTsw_bridge::spec_no = >NULL()`

Definition at line 16 of file IXMsw\_bridge.f90.

##### 6.254.2.3 `integer(i4b),dimension(:),pointer IXMsw_bridge::IXTsw_bridge::total_work = >NULL()`

Definition at line 17 of file IXMsw\_bridge.f90.

**6.254.2.4** `integer(i4b),dimension(:),pointer IXMsw_bridge::IXTsw_bridge::work_ind = >NULL()`

Definition at line 18 of file IXMsw\_bridge.f90.

**6.254.2.5** `integer(i4b),dimension(:),pointer IXMsw_bridge::IXTsw_bridge::work_no = >NULL()`

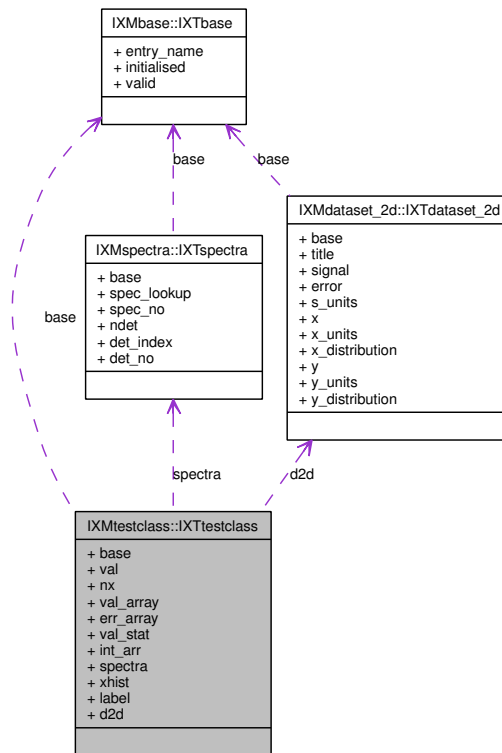
Definition at line 19 of file IXMsw\_bridge.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMsw_bridge.f90`

## 6.255 IXMtestclass::IXTtestclass Struct Reference

Collaboration diagram for IXMtestclass::IXTtestclass:



### Public Attributes

- `type(IXTbase)` `base`
- `real(dp)` `val`
- `integer(i4b)` `nx`
- `real(dp)`, `dimension(:)`, `pointer val_array = > NULL()`
- `real(dp)`, `dimension(:)`, `pointer err_array = > NULL()`
- `real(dp)`, `dimension(3)` `val_stat = 0.0`
- `integer(i4b)`, `dimension(:,:)`, `pointer int_arr = >NULL()`
- `type(IXTspectra)` `spectra`
- `logical` `xhist = .FALSE.`
- `character(len=short_len)` `label = 'x-label'`
- `type(IXTdataset_2d)`, `dimension(:)`, `allocatable` `d2d`

### 6.255.1 Detailed Description

Definition at line 30 of file IXMtestclass.f90.

## 6.255.2 Member Data Documentation

### 6.255.2.1 `type(IXTbase) IXMtestclass::IXTtestclass::base`

Definition at line 33 of file IXMtestclass.f90.

### 6.255.2.2 `real(dp) IXMtestclass::IXTtestclass::val`

Definition at line 34 of file IXMtestclass.f90.

### 6.255.2.3 `integer(i4b) IXMtestclass::IXTtestclass::nx`

Definition at line 35 of file IXMtestclass.f90.

### 6.255.2.4 `real(dp),dimension(:) ,pointer IXMtestclass::IXTtestclass::val_array = > NULL()`

Definition at line 36 of file IXMtestclass.f90.

### 6.255.2.5 `real(dp),dimension(:) ,pointer IXMtestclass::IXTtestclass::err_array = > NULL()`

Definition at line 37 of file IXMtestclass.f90.

### 6.255.2.6 `real(dp),dimension(3) IXMtestclass::IXTtestclass::val_stat = 0.0`

Definition at line 38 of file IXMtestclass.f90.

### 6.255.2.7 `integer(i4b),dimension(:,:),pointer IXMtestclass::IXTtestclass::int_arr = >NULL()`

Definition at line 39 of file IXMtestclass.f90.

### 6.255.2.8 `type(IXTspectra) IXMtestclass::IXTtestclass::spectra`

Definition at line 40 of file IXMtestclass.f90.

### 6.255.2.9 `logical IXMtestclass::IXTtestclass::xhist = .FALSE.`

Definition at line 41 of file IXMtestclass.f90.

### 6.255.2.10 `character(len=short_len) IXMtestclass::IXTtestclass::label = 'x-label'`

Definition at line 42 of file IXMtestclass.f90.

**6.255.2.11** `type(IXTdataset_2d),dimension(:) ,allocatable  
IXMtestclass::IXTtestclass::d2d`

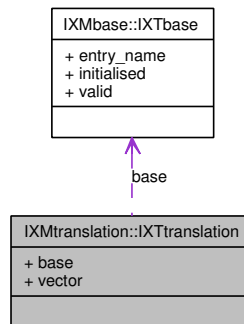
Definition at line 43 of file IXMtestclass.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMtestclass.f90`

## 6.256 IXMtranslation::IXTtranslation Struct Reference

Collaboration diagram for IXMtranslation::IXTtranslation:



### Public Attributes

- `type(IXTbase) base`
- `real(dp), dimension(3) vector = 0.0_dp`

### 6.256.1 Detailed Description

Definition at line 24 of file IXMtranslation.f90.

### 6.256.2 Member Data Documentation

#### 6.256.2.1 `type(IXTbase) IXMtranslation::IXTtranslation::base`

Definition at line 26 of file IXMtranslation.f90.

#### 6.256.2.2 `real(dp),dimension(3) IXMtranslation::IXTtranslation::vector = 0.0_dp`

Definition at line 27 of file IXMtranslation.f90.

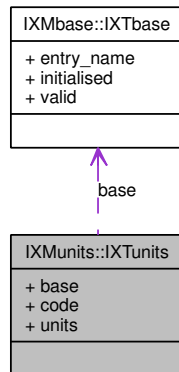
The documentation for this struct was generated from the following file:

- `libclasses/IXMtranslation.f90`



## 6.257 IXMunits::IXTunits Struct Reference

Collaboration diagram for IXMunits::IXTunits:



### Public Attributes

- `type(IXTbase) base`
- `character(len=4) code = ''`
- `character(long_len) units`

#### 6.257.1 Detailed Description

Definition at line 14 of file IXMunits.f90.

#### 6.257.2 Member Data Documentation

##### 6.257.2.1 `type(IXTbase) IXMunits::IXTunits::base`

Definition at line 16 of file IXMunits.f90.

##### 6.257.2.2 `character(len=4) IXMunits::IXTunits::code = ''`

Definition at line 17 of file IXMunits.f90.

##### 6.257.2.3 `character(long_len) IXMunits::IXTunits::units`

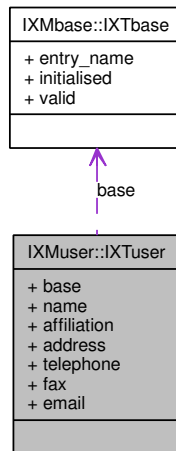
Definition at line 18 of file IXMunits.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMunits.f90`

## 6.258 IXMuser::IXTuser Struct Reference

Collaboration diagram for IXMuser::IXTuser:



### Public Attributes

- `type(IXTbase) base`
- `character(len=long_len) name = 'name'`
- `character(len=long_len) affiliation = 'affiliation'`
- `character(len=long_len) address = 'address'`
- `character(len=long_len) telephone = 'telephone'`
- `character(len=long_len) fax = 'fax'`
- `character(len=long_len) email = 'email'`

### 6.258.1 Detailed Description

Definition at line 13 of file IXMuser.f90.

### 6.258.2 Member Data Documentation

#### 6.258.2.1 `type(IXTbase) IXMuser::IXTuser::base`

Definition at line 15 of file IXMuser.f90.

#### 6.258.2.2 `character(len=long_len) IXMuser::IXTuser::name = 'name'`

Definition at line 16 of file IXMuser.f90.

#### 6.258.2.3 `character(len=long_len) IXMuser::IXTuser::affiliation = 'affiliation'`

Definition at line 17 of file IXMuser.f90.

**6.258.2.4** `character(len=long_len) IXMuser::IXTuser::address = 'address'`

Definition at line 18 of file IXMuser.f90.

**6.258.2.5** `character(len=long_len) IXMuser::IXTuser::telephone = 'telephone'`

Definition at line 19 of file IXMuser.f90.

**6.258.2.6** `character(len=long_len) IXMuser::IXTuser::fax = 'fax'`

Definition at line 20 of file IXMuser.f90.

**6.258.2.7** `character(len=long_len) IXMuser::IXTuser::email = 'email'`

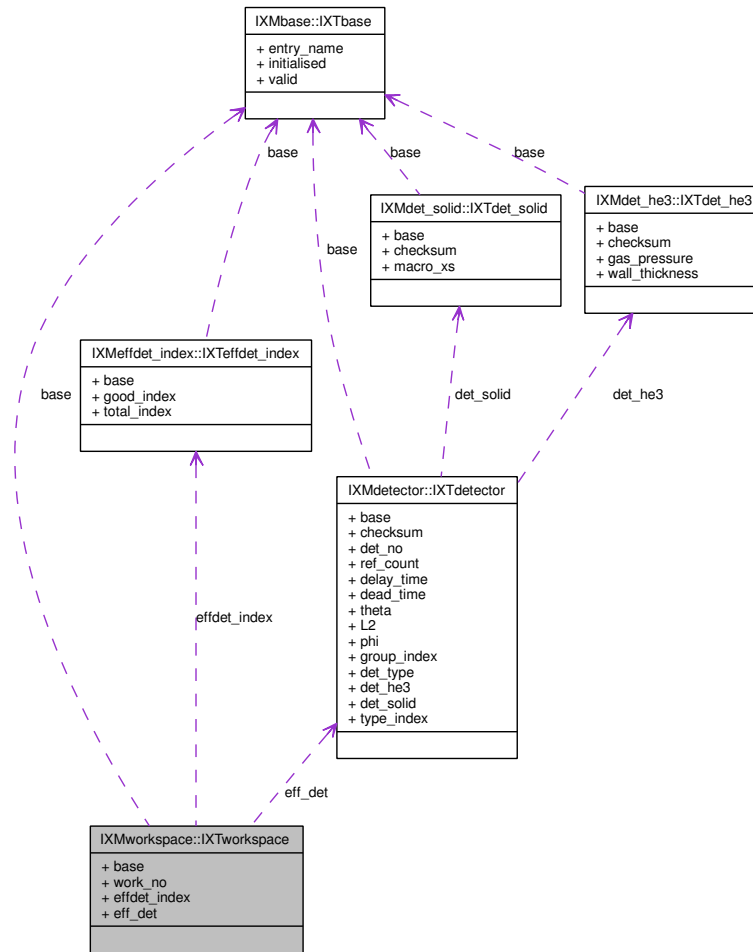
Definition at line 21 of file IXMuser.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMuser.f90`

## 6.259 IXMworkspace::IXTworkspace Struct Reference

Collaboration diagram for IXMworkspace::IXTworkspace:



### Public Attributes

- `type(IXTbase)` `base`
- `integer(i4b)`, `dimension(:)`, `pointer work_no = >NULL()`
- `type(IXTeffdet_index)` `effdet_index`
- `type(IXTdetector)` `eff_det`

### 6.259.1 Detailed Description

Definition at line 15 of file IXMworkspace.f90.

## 6.259.2 Member Data Documentation

### 6.259.2.1 `type(IXTbase)` `IXMworkspace::IXTworkspace::base`

Definition at line 17 of file `IXMworkspace.f90`.

### 6.259.2.2 `integer(i4b),dimension(:),pointer` `IXMworkspace::IXTworkspace::work_no = >NULL()`

Definition at line 20 of file `IXMworkspace.f90`.

### 6.259.2.3 `type (IXTeffdet_index)` `IXMworkspace::IXTworkspace::effdet_index`

Definition at line 23 of file `IXMworkspace.f90`.

### 6.259.2.4 `type (IXTdetector)` `IXMworkspace::IXTworkspace::eff_det`

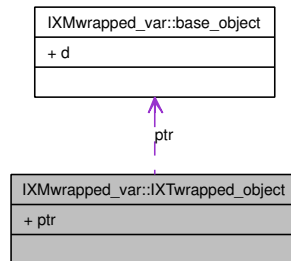
Definition at line 28 of file `IXMworkspace.f90`.

The documentation for this struct was generated from the following file:

- `libclasses/IXMworkspace.f90`

## 6.260 IXMwrapped\_var::IXTwrapped\_object Struct Reference

Collaboration diagram for IXMwrapped\_var::IXTwrapped\_object:



### Public Attributes

- `type(base_object), pointer ptr = >NULL()`

#### 6.260.1 Detailed Description

Definition at line 28 of file IXMwrappedvar.f90.

#### 6.260.2 Member Data Documentation

##### 6.260.2.1 `type(base_object), pointer IXMwrapped_var::IXTwrapped_object::ptr = >NULL()`

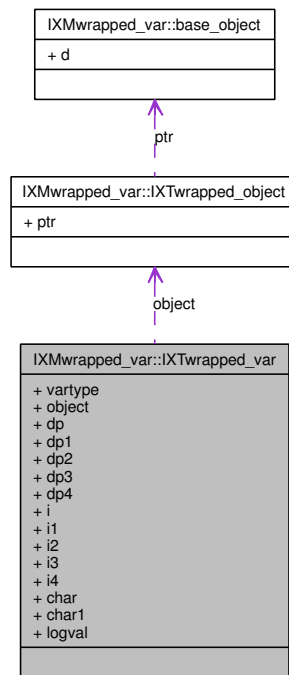
Definition at line 30 of file IXMwrappedvar.f90.

The documentation for this struct was generated from the following file:

- `libclasses/IXMwrappedvar.f90`

## 6.261 IXMwrapped\_var::IXTwrapped\_var Struct Reference

Collaboration diagram for IXMwrapped\_var::IXTwrapped\_var:



### Public Attributes

- integer vartype = IXCvartype\_unknown
- type(IXTwrapped\_object) object
- real(dp) dp
- real(dp), dimension(:), pointer dp1 = > NULL()
- real(dp), dimension(:, :), pointer dp2 = > NULL()
- real(dp), dimension(:, :, :), pointer dp3 = > NULL()
- real(dp), dimension(:, :, :, :), pointer dp4 = > NULL()
- integer(i4b) i
- integer(i4b), dimension(:), pointer i1 = > NULL()
- integer(i4b), dimension(:, :), pointer i2 = > NULL()
- integer(i4b), dimension(:, :, :), pointer i3 = > NULL()
- integer(i4b), dimension(:, :, :, :), pointer i4 = > NULL()
- character(len=long\_len) char = ' '
- character(len=long\_len), dimension(:), pointer char1 = > NULL()
- logical logval

### 6.261.1 Detailed Description

Definition at line 32 of file IXMwrappedvar.f90.

## 6.261.2 Member Data Documentation

**6.261.2.1** `integer IXMwrapped_var::IXTrapped_var::vartype = IXCvartype_unknown`

Definition at line 34 of file IXMwrappedvar.f90.

**6.261.2.2** `type(IXTrapped_object) IXMwrapped_var::IXTrapped_var::object`

Definition at line 36 of file IXMwrappedvar.f90.

**6.261.2.3** `real(dp) IXMwrapped_var::IXTrapped_var::dp`

Definition at line 38 of file IXMwrappedvar.f90.

**6.261.2.4** `real(dp),dimension(:) ,pointer IXMwrapped_var::IXTrapped_var::dp1 = > NULL()`

Definition at line 39 of file IXMwrappedvar.f90.

**6.261.2.5** `real(dp),dimension(:,) ,pointer IXMwrapped_var::IXTrapped_var::dp2 = > NULL()`

Definition at line 40 of file IXMwrappedvar.f90.

**6.261.2.6** `real(dp),dimension(:,,:) ,pointer IXMwrapped_var::IXTrapped_var::dp3 = > NULL()`

Definition at line 41 of file IXMwrappedvar.f90.

**6.261.2.7** `real(dp),dimension(:,,:,:) ,pointer IXMwrapped_var::IXTrapped_var::dp4 = > NULL()`

Definition at line 42 of file IXMwrappedvar.f90.

**6.261.2.8** `integer(i4b) IXMwrapped_var::IXTrapped_var::i`

Definition at line 43 of file IXMwrappedvar.f90.

**6.261.2.9** `integer(i4b),dimension(:) ,pointer IXMwrapped_var::IXTrapped_var::i1 = > NULL()`

Definition at line 44 of file IXMwrappedvar.f90.

**6.261.2.10** `integer(i4b),dimension(:,) ,pointer IXMwrapped_var::IXTrapped_var::i2 = > NULL()`

Definition at line 45 of file IXMwrappedvar.f90.



**6.261.2.11** integer(i4b),dimension(:, :, :), pointer IXMwrapped\_var::IXTwrapped\_var::i3 = > NULL()

Definition at line 46 of file IXMwrappedvar.f90.

**6.261.2.12** integer(i4b),dimension(:, :, :), pointer IXMwrapped\_var::IXTwrapped\_var::i4 = > NULL()

Definition at line 47 of file IXMwrappedvar.f90.

**6.261.2.13** character(len=long\_len) IXMwrapped\_var::IXTwrapped\_var::char = ' ,

Definition at line 48 of file IXMwrappedvar.f90.

**6.261.2.14** character(len=long\_len),dimension(:) ,pointer IXMwrapped\_var::IXTwrapped\_var::char1 = > NULL()

Definition at line 49 of file IXMwrappedvar.f90.

**6.261.2.15** logical IXMwrapped\_var::IXTwrapped\_var::logval

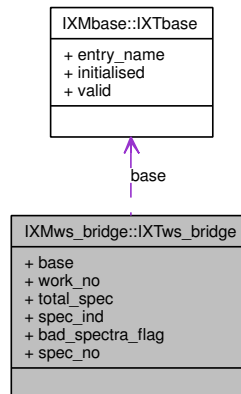
Definition at line 50 of file IXMwrappedvar.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMwrappedvar.f90

## 6.262 IXMws\_bridge::IXTws\_bridge Struct Reference

Collaboration diagram for IXMws\_bridge::IXTws\_bridge:



### Public Attributes

- `type(IXTbase) base`
- `integer(i4b), dimension(:), pointer work_no = >NULL()`
- `integer(i4b), dimension(:), pointer total_spec = >NULL()`
- `integer(i4b), dimension(:), pointer spec_ind = >NULL()`
- `integer(i4b), dimension(:), pointer bad_spectra_flag = >NULL()`
- `integer(i4b), dimension(:), pointer spec_no = >NULL()`

### 6.262.1 Detailed Description

Definition at line 13 of file IXMws\_bridge.f90.

### 6.262.2 Member Data Documentation

#### 6.262.2.1 `type(IXTbase) IXMws_bridge::IXTws_bridge::base`

Definition at line 16 of file IXMws\_bridge.f90.

#### 6.262.2.2 `integer(i4b),dimension(:),pointer IXMws_bridge::IXTws_bridge::work_no = >NULL()`

Definition at line 17 of file IXMws\_bridge.f90.

#### 6.262.2.3 `integer(i4b),dimension(:),pointer IXMws_bridge::IXTws_bridge::total_spec = >NULL()`

Definition at line 18 of file IXMws\_bridge.f90.

**6.262.2.4** integer(i4b),dimension(:),pointer IXMws\_bridge::IXTws\_bridge::spec\_ind = >NULL()

Definition at line 19 of file IXMws\_bridge.f90.

**6.262.2.5** integer(i4b),dimension(:),pointer IXMws\_bridge::IXTws\_bridge::bad\_spectra\_flag = >NULL()

Definition at line 20 of file IXMws\_bridge.f90.

**6.262.2.6** integer(i4b),dimension(:),pointer IXMws\_bridge::IXTws\_bridge::spec\_no = >NULL()

Definition at line 21 of file IXMws\_bridge.f90.

The documentation for this struct was generated from the following file:

- libclasses/IXMws\_bridge.f90

## 6.263 NXmodule::NXgetattr Interface Reference

### Public Member Functions

- function NXgeti1attr (*file\_id*, *attr\_name*, *value*, *attr\_length*, *attr\_type*)
- function NXgeti2attr (*file\_id*, *attr\_name*, *value*, *attr\_length*, *attr\_type*)
- function NXgeti4attr (*file\_id*, *attr\_name*, *value*, *attr\_length*, *attr\_type*)
- function NXgetr4attr (*file\_id*, *attr\_name*, *value*, *attr\_length*, *attr\_type*)
- function NXgetr8attr (*file\_id*, *attr\_name*, *value*, *attr\_length*, *attr\_type*)
- function NXgetcharattr (*file\_id*, *attr\_name*, *value*, *attr\_length*, *attr\_type*)

### 6.263.1 Detailed Description

Definition at line 115 of file NXmodule.f90.

### 6.263.2 Member Function Documentation

**6.263.2.1** function NXmodule::NXgetattr::NXgeti1attr  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *attr\_name*, INTE-  
 GER(KIND=NXi1),intent(out) *value*, INTEGER,intent(inout),optional  
*attr\_length*, INTEGER,intent(in),optional *attr\_type*)

Definition at line 725 of file NXmodule.f90.

**6.263.2.2** function NXmodule::NXgetattr::NXgeti2attr  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *attr\_name*, INTE-  
 GER(KIND=NXi2),intent(out) *value*, INTEGER,intent(inout),optional  
*attr\_length*, INTEGER,intent(in),optional *attr\_type*)

Definition at line 743 of file NXmodule.f90.

**6.263.2.3** function NXmodule::NXgetattr::NXgeti4attr  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *attr\_name*, INTE-  
 GER(KIND=NXi4),intent(out) *value*, INTEGER,intent(inout),optional  
*attr\_length*, INTEGER,intent(in),optional *attr\_type*)

Definition at line 761 of file NXmodule.f90.

**6.263.2.4** function NXmodule::NXgetattr::NXgetr4attr  
 (TYPE(NXhandle),intent(inout) *file\_id*,  
 CHARACTER(len=\*),intent(in) *attr\_name*,  
 REAL(KIND=NXr4),intent(out) *value*, INTEGER,intent(inout),optional  
*attr\_length*, INTEGER,intent(in),optional *attr\_type*)

Definition at line 779 of file NXmodule.f90.

**6.263.2.5** `function NXmodule::NXgetattr::NXgetr8attr`  
(TYPE(NXhandle),intent(inout) *file\_id*,  
CHARACTER(len=\*),intent(in) *attr\_name*,  
REAL(KIND=NXr8),intent(out) *value*, INTEGER,intent(inout),optional  
*attr\_length*, INTEGER,intent(in),optional *attr\_type*)

Definition at line 797 of file NXmodule.f90.

**6.263.2.6** `function NXmodule::NXgetattr::NXgetcharattr`  
(TYPE(NXhandle),intent(inout) *file\_id*,  
CHARACTER(len=\*),intent(in) *attr\_name*,  
CHARACTER(len=\*),intent(out) *value*, INTE-  
GER,intent(inout),optional *attr\_length*, INTEGER,intent(in),optional  
*attr\_type*)

Definition at line 815 of file NXmodule.f90.

The documentation for this interface was generated from the following file:

- libclasses/NXmodule.f90

## 6.264 NXmodule::NXgetdata Interface Reference

### Public Member Functions

- INTEGER NXgeti1 (file\_id, data)
- INTEGER NXgeti2 (file\_id, data)
- INTEGER NXgeti4 (file\_id, data)
- INTEGER NXgetr4 (file\_id, data)
- INTEGER NXgetr8 (file\_id, data)
- INTEGER NXgetchar (file\_id, data)

#### 6.264.1 Detailed Description

Definition at line 108 of file NXmodule.f90.

#### 6.264.2 Member Function Documentation

**6.264.2.1** INTEGER NXmodule::NXgetdata::NXgeti1  
(TYPE(NXhandle),intent(inout) file\_id, INTEGER(KIND=NXi1),dimension(:),intent(out) data)

Definition at line 278 of file NXmodule.f90.

**6.264.2.2** INTEGER NXmodule::NXgetdata::NXgeti2  
(TYPE(NXhandle),intent(inout) file\_id, INTEGER(KIND=NXi2),dimension(:),intent(out) data)

Definition at line 325 of file NXmodule.f90.

**6.264.2.3** INTEGER NXmodule::NXgetdata::NXgeti4  
(TYPE(NXhandle),intent(inout) file\_id, INTEGER(KIND=NXi4),dimension(:),intent(out) data)

Definition at line 367 of file NXmodule.f90.

**6.264.2.4** INTEGER NXmodule::NXgetdata::NXgetr4  
(TYPE(NXhandle),intent(inout) file\_id, REAL(KIND=NXr4),dimension(:),intent(out) data)

Definition at line 404 of file NXmodule.f90.

**6.264.2.5** INTEGER NXmodule::NXgetdata::NXgetr8  
(TYPE(NXhandle),intent(inout) file\_id, REAL(KIND=NXr8),dimension(:),intent(out) data)

Definition at line 436 of file NXmodule.f90.

**6.264.2.6** INTEGER NXmodule::NXgetdata::NXgetchar  
(TYPE(NXhandle),intent(inout) *file\_id*,  
CHARACTER(len=\*),intent(out) *data*)

Definition at line 473 of file NXmodule.f90.

The documentation for this interface was generated from the following file:

- libclasses/NXmodule.f90

## 6.265 NXmodule::NXgetslab Interface Reference

### Public Member Functions

- INTEGER NXgeti1slab (file\_id, data, data\_start, data\_size)
- INTEGER NXgeti2slab (file\_id, data, data\_start, data\_size)
- INTEGER NXgeti4slab (file\_id, data, data\_start, data\_size)
- INTEGER NXgetr4slab (file\_id, data, data\_start, data\_size)
- INTEGER NXgetr8slab (file\_id, data, data\_start, data\_size)

### 6.265.1 Detailed Description

Definition at line 111 of file NXmodule.f90.

### 6.265.2 Member Function Documentation

**6.265.2.1** INTEGER NXmodule::NXgetslab::NXgeti1slab (TYPE(NXhandle),intent(inout) file\_id, INTEGER(KIND=NXi1),dimension(:),intent(out) data, INTEGER,dimension(:),intent(in) data\_start, INTEGER,dimension(:),intent(in) data\_size)

Definition at line 508 of file NXmodule.f90.

**6.265.2.2** INTEGER NXmodule::NXgetslab::NXgeti2slab (TYPE(NXhandle),intent(inout) file\_id, INTEGER(KIND=NXi2),dimension(:),intent(out) data, INTEGER,dimension(:),intent(in) data\_start, INTEGER,dimension(:),intent(in) data\_size)

Definition at line 559 of file NXmodule.f90.

**6.265.2.3** INTEGER NXmodule::NXgetslab::NXgeti4slab (TYPE(NXhandle),intent(inout) file\_id, INTEGER(KIND=NXi4),dimension(:),intent(out) data, INTEGER,dimension(:),intent(in) data\_start, INTEGER,dimension(:),intent(in) data\_size)

Definition at line 605 of file NXmodule.f90.

**6.265.2.4** INTEGER NXmodule::NXgetslab::NXgetr4slab (TYPE(NXhandle),intent(inout) file\_id, REAL(KIND=NXr4),dimension(:),intent(out) data, INTEGER,dimension(:),intent(in) data\_start, INTEGER,dimension(:),intent(in) data\_size)

Definition at line 646 of file NXmodule.f90.



**6.265.2.5** INTEGER NXmodule::NXgetslab::NXgetr8slab  
(TYPE(NXhandle),intent(inout) *file\_id*,  
REAL(KIND=NXr8),dimension(:),intent(out) *data*,  
INTEGER,dimension(:),intent(in) *data\_start*,  
INTEGER,dimension(:),intent(in) *data\_size*)

Definition at line 686 of file NXmodule.f90.

The documentation for this interface was generated from the following file:

- libclasses/NXmodule.f90

## 6.266 NXmodule::NXhandle Struct Reference

### Public Attributes

- integer, dimension(5000) **opaque**

### 6.266.1 Detailed Description

Definition at line 70 of file NXmodule.f90.

### 6.266.2 Member Data Documentation

#### 6.266.2.1 integer,dimension(5000) NXmodule::NXhandle::opaque

Definition at line 72 of file NXmodule.f90.

The documentation for this struct was generated from the following file:

- libclasses/**NXmodule.f90**

## 6.267 NXmodule::NXlink Struct Reference

### Public Attributes

- CHARACTER(len=1024) tag5
- CHARACTER(len=1024) ref5
- CHARACTER(len=1024) refd

### 6.267.1 Detailed Description

Definition at line 77 of file NXmodule.f90.

### 6.267.2 Member Data Documentation

#### 6.267.2.1 CHARACTER(len=1024) NXmodule::NXlink::tag5

Definition at line 80 of file NXmodule.f90.

#### 6.267.2.2 CHARACTER(len=1024) NXmodule::NXlink::ref5

Definition at line 81 of file NXmodule.f90.

#### 6.267.2.3 CHARACTER(len=1024) NXmodule::NXlink::refd

Definition at line 82 of file NXmodule.f90.

The documentation for this struct was generated from the following file:

- libclasses/NXmodule.f90

## 6.268 NXmodule::NXputattr Interface Reference

### Public Member Functions

- function NXputi1attr (file\_id, name, value, value\_length, value\_type)
- function NXputi2attr (file\_id, name, value, value\_length, value\_type)
- function NXputi4attr (file\_id, name, value, value\_length, value\_type)
- function NXputr4attr (file\_id, name, value, value\_length, value\_type)
- function NXputr8attr (file\_id, name, value, value\_length, value\_type)
- function NXputcharattr (file\_id, name, value, value\_length, value\_type)

### 6.268.1 Detailed Description

Definition at line 126 of file NXmodule.f90.

### 6.268.2 Member Function Documentation

**6.268.2.1** function NXmodule::NXputattr::NXputi1attr  
 (TYPE(NXhandle),intent(inout) file\_id,  
 CHARACTER(len=\*),intent(in) name, INTEGER(KIND=NXi1),intent(in) value, INTEGER,intent(in),optional  
 value\_length, INTEGER,intent(in),optional value\_type)

Definition at line 995 of file NXmodule.f90.

**6.268.2.2** function NXmodule::NXputattr::NXputi2attr  
 (TYPE(NXhandle),intent(inout) file\_id,  
 CHARACTER(len=\*),intent(in) name, INTEGER(KIND=NXi2),intent(in) value, INTEGER,intent(in),optional  
 value\_length, INTEGER,intent(in),optional value\_type)

Definition at line 1011 of file NXmodule.f90.

**6.268.2.3** function NXmodule::NXputattr::NXputi4attr  
 (TYPE(NXhandle),intent(inout) file\_id,  
 CHARACTER(len=\*),intent(in) name, INTEGER(KIND=NXi4),intent(in) value, INTEGER,intent(in),optional  
 value\_length, INTEGER,intent(in),optional value\_type)

Definition at line 1027 of file NXmodule.f90.

**6.268.2.4** function NXmodule::NXputattr::NXputr4attr  
 (TYPE(NXhandle),intent(inout) file\_id,  
 CHARACTER(len=\*),intent(in) name, REAL(KIND=NXr4),intent(in) value, INTEGER,intent(in),optional  
 value\_length, INTEGER,intent(in),optional value\_type)

Definition at line 1043 of file NXmodule.f90.

**6.268.2.5** `function NXmodule::NXputattr::NXputr8attr`  
(TYPE(NXhandle),intent(inout) *file\_id*,  
CHARACTER(len=\*),intent(in) *name*, REAL(KIND=NXr8),intent(in)  
*value*, INTEGER,intent(in),optional *value\_length*,  
INTEGER,intent(in),optional *value\_type*)

Definition at line 1059 of file NXmodule.f90.

**6.268.2.6** `function NXmodule::NXputattr::NXputcharattr`  
(TYPE(NXhandle),intent(inout) *file\_id*,  
CHARACTER(len=\*),intent(in) *name*, CHARACTER(len=\*),intent(in)  
*value*, INTEGER,intent(in),optional *value\_length*,  
INTEGER,intent(in),optional *value\_type*)

Definition at line 1075 of file NXmodule.f90.

The documentation for this interface was generated from the following file:

- libclasses/NXmodule.f90

## 6.269 NXmodule::NXputdata Interface Reference

### Public Member Functions

- INTEGER NXputi1 (*file\_id*, *data*)
- INTEGER NXputi2 (*file\_id*, *data*)
- INTEGER NXputi4 (*file\_id*, *data*)
- INTEGER NXputr4 (*file\_id*, *data*)
- INTEGER NXputr8 (*file\_id*, *data*)
- INTEGER NXputchar (*file\_id*, *data*)

### 6.269.1 Detailed Description

Definition at line 119 of file NXmodule.f90.

### 6.269.2 Member Function Documentation

**6.269.2.1** INTEGER NXmodule::NXputdata::NXputi1  
(TYPE(NXhandle),intent(inout) *file\_id*, INTEGER(KIND=NXi1),dimension(:),intent(in) *data*)

Definition at line 840 of file NXmodule.f90.

**6.269.2.2** INTEGER NXmodule::NXputdata::NXputi2  
(TYPE(NXhandle),intent(inout) *file\_id*, INTEGER(KIND=NXi2),dimension(:),intent(in) *data*)

Definition at line 852 of file NXmodule.f90.

**6.269.2.3** INTEGER NXmodule::NXputdata::NXputi4  
(TYPE(NXhandle),intent(inout) *file\_id*, INTEGER(KIND=NXi4),dimension(:),intent(in) *data*)

Definition at line 864 of file NXmodule.f90.

**6.269.2.4** INTEGER NXmodule::NXputdata::NXputr4  
(TYPE(NXhandle),intent(inout) *file\_id*,  
REAL(KIND=NXr4),dimension(:),intent(in) *data*)

Definition at line 876 of file NXmodule.f90.

**6.269.2.5** INTEGER NXmodule::NXputdata::NXputr8  
(TYPE(NXhandle),intent(inout) *file\_id*,  
REAL(KIND=NXr8),dimension(:),intent(in) *data*)

Definition at line 888 of file NXmodule.f90.

**6.269.2.6** INTEGER NXmodule::NXputdata::NXputchar  
(TYPE(NXhandle),intent(inout) *file\_id*,  
CHARACTER(len=\*),intent(in) *data*)

Definition at line 900 of file NXmodule.f90.

The documentation for this interface was generated from the following file:

- libclasses/NXmodule.f90

## 6.270 NXmodule::NXputslab Interface Reference

### Public Member Functions

- INTEGER NXputi1slab (*file\_id*, *data*, *data\_start*, *data\_size*)
- INTEGER NXputi2slab (*file\_id*, *data*, *data\_start*, *data\_size*)
- INTEGER NXputi4slab (*file\_id*, *data*, *data\_start*, *data\_size*)
- INTEGER NXputr4slab (*file\_id*, *data*, *data\_start*, *data\_size*)
- INTEGER NXputr8slab (*file\_id*, *data*, *data\_start*, *data\_size*)

### 6.270.1 Detailed Description

Definition at line 122 of file NXmodule.f90.

### 6.270.2 Member Function Documentation

**6.270.2.1** INTEGER NXmodule::NXputslab::NXputi1slab (TYPE(NXhandle),intent(inout) *file\_id*, INTEGER(KIND=NXi1),dimension(:),intent(in) *data*, INTEGER,dimension(:),intent(in) *data\_start*, INTEGER,dimension(:),intent(in) *data\_size*)

Definition at line 916 of file NXmodule.f90.

**6.270.2.2** INTEGER NXmodule::NXputslab::NXputi2slab (TYPE(NXhandle),intent(inout) *file\_id*, INTEGER(KIND=NXi2),dimension(:),intent(in) *data*, INTEGER,dimension(:),intent(in) *data\_start*, INTEGER,dimension(:),intent(in) *data\_size*)

Definition at line 931 of file NXmodule.f90.

**6.270.2.3** INTEGER NXmodule::NXputslab::NXputi4slab (TYPE(NXhandle),intent(inout) *file\_id*, INTEGER(KIND=NXi4),dimension(:),intent(in) *data*, INTEGER,dimension(:),intent(in) *data\_start*, INTEGER,dimension(:),intent(in) *data\_size*)

Definition at line 946 of file NXmodule.f90.

**6.270.2.4** INTEGER NXmodule::NXputslab::NXputr4slab (TYPE(NXhandle),intent(inout) *file\_id*, REAL(KIND=NXr4),dimension(:),intent(in) *data*, INTEGER,dimension(:),intent(in) *data\_start*, INTEGER,dimension(:),intent(in) *data\_size*)

Definition at line 961 of file NXmodule.f90.



**6.270.2.5** INTEGER NXmodule::NXputslab::NXputr8slab  
(TYPE(NXhandle),intent(inout) *file\_id*,  
REAL(KIND=NXr8),dimension(:),intent(in) *data*,  
INTEGER,dimension(:),intent(in) *data\_start*,  
INTEGER,dimension(:),intent(in) *data\_size*)

Definition at line 976 of file NXmodule.f90.

The documentation for this interface was generated from the following file:

- libclasses/NXmodule.f90

## 6.271 NXUmodule::NXUreaddata Interface Reference

### Public Member Functions

- NXUreadi4
- NXUreadr4
- NXUreadr8
- NXUreadchar
- NXUreadi4array
- NXUreadr4array
- NXUreadr8array
- NXUread2Di4array
- NXUread2Dr4array
- NXUread2Dr8array
- NXUread3Di4array
- NXUread3Dr4array
- NXUread3Dr8array
- NXUread4Di4array
- NXUread4Dr4array
- NXUread4Dr8array
- NXUread1Dcarray

### 6.271.1 Detailed Description

Definition at line 55 of file NXUmodule.f90.

## 6.271.2 Member Function Documentation

- 6.271.2.1 NXUmodule::NXUreaddata::NXUreadi4 ()
- 6.271.2.2 NXUmodule::NXUreaddata::NXUreadr4 ()
- 6.271.2.3 NXUmodule::NXUreaddata::NXUreadr8 ()
- 6.271.2.4 NXUmodule::NXUreaddata::NXUreadchar ()
- 6.271.2.5 NXUmodule::NXUreaddata::NXUreadi4array ()
- 6.271.2.6 NXUmodule::NXUreaddata::NXUreadr4array ()
- 6.271.2.7 NXUmodule::NXUreaddata::NXUreadr8array ()
- 6.271.2.8 NXUmodule::NXUreaddata::NXUread2Di4array ()
- 6.271.2.9 NXUmodule::NXUreaddata::NXUread2Dr4array ()
- 6.271.2.10 NXUmodule::NXUreaddata::NXUread2Dr8array ()
- 6.271.2.11 NXUmodule::NXUreaddata::NXUread3Di4array ()
- 6.271.2.12 NXUmodule::NXUreaddata::NXUread3Dr4array ()
- 6.271.2.13 NXUmodule::NXUreaddata::NXUread3Dr8array ()
- 6.271.2.14 NXUmodule::NXUreaddata::NXUread4Di4array ()
- 6.271.2.15 NXUmodule::NXUreaddata::NXUread4Dr4array ()
- 6.271.2.16 NXUmodule::NXUreaddata::NXUread4Dr8array ()
- 6.271.2.17 NXUmodule::NXUreaddata::NXUread1Dcarray ()

The documentation for this interface was generated from the following files:

- libclasses/NXUmodule.f90

## 6.272 NXUmodule::NXUwritedata Interface Reference

### Public Member Functions

- `NXUwritei4`
- `NXUwriter4`
- `NXUwriter8`
- `NXUwritechar`
- `NXUwritei4array`
- `NXUwriter4array`
- `NXUwriter8array`
- `NXUwrite2Di4array`
- `NXUwrite2Dr4array`
- `NXUwrite2Dr8array`
- `NXUwrite3Di4array`
- `NXUwrite3Dr4array`
- `NXUwrite3Dr8array`
- `NXUwrite4Di4array`
- `NXUwrite4Dr4array`
- `NXUwrite4Dr8array`
- `NXUwrite1Dcarray`

### 6.272.1 Detailed Description

Definition at line 45 of file NXUmodule.f90.

## 6.272.2 Member Function Documentation

- 6.272.2.1 NXUmodule::NXUwritedata::NXUwritei4 ()
- 6.272.2.2 NXUmodule::NXUwritedata::NXUwriter4 ()
- 6.272.2.3 NXUmodule::NXUwritedata::NXUwriter8 ()
- 6.272.2.4 NXUmodule::NXUwritedata::NXUwritechar ()
- 6.272.2.5 NXUmodule::NXUwritedata::NXUwritei4array ()
- 6.272.2.6 NXUmodule::NXUwritedata::NXUwriter4array ()
- 6.272.2.7 NXUmodule::NXUwritedata::NXUwriter8array ()
- 6.272.2.8 NXUmodule::NXUwritedata::NXUwrite2Di4array ()
- 6.272.2.9 NXUmodule::NXUwritedata::NXUwrite2Dr4array ()
- 6.272.2.10 NXUmodule::NXUwritedata::NXUwrite2Dr8array ()
- 6.272.2.11 NXUmodule::NXUwritedata::NXUwrite3Di4array ()
- 6.272.2.12 NXUmodule::NXUwritedata::NXUwrite3Dr4array ()
- 6.272.2.13 NXUmodule::NXUwritedata::NXUwrite3Dr8array ()
- 6.272.2.14 NXUmodule::NXUwritedata::NXUwrite4Di4array ()
- 6.272.2.15 NXUmodule::NXUwritedata::NXUwrite4Dr4array ()
- 6.272.2.16 NXUmodule::NXUwritedata::NXUwrite4Dr8array ()
- 6.272.2.17 NXUmodule::NXUwritedata::NXUwrite1Dcarray ()

The documentation for this interface was generated from the following files:

- libclasses/NXUmodule.f90

## 6.273 IXMtranslation::operator Interface Reference

### 6.273.1 Detailed Description

Definition at line 39 of file IXMtranslation.f90.

The documentation for this interface was generated from the following file:

- libclasses/**IXMtranslation.f90**

## 6.274 IXMtranslation::operator Interface Reference

### 6.274.1 Detailed Description

Definition at line 39 of file IXMtranslation.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMtranslation.f90

## 6.275 IXMorientation::operator Interface Reference

### 6.275.1 Detailed Description

Definition at line 55 of file IXMorientation.f90.

The documentation for this interface was generated from the following file:

- libclasses/IXMorientation.f90



## 6.276 vax\_double Struct Reference

### Public Attributes

- unsigned int **mantissa1**: 7
- unsigned int **exp**: 8
- unsigned int **sign**: 1
- unsigned int **mantissa2**: 16
- unsigned int **mantissa3**: 16
- unsigned int **mantissa4**: 16

### 6.276.1 Detailed Description

Definition at line 235 of file endian\_convert.c.

### 6.276.2 Member Data Documentation

#### 6.276.2.1 unsigned int vax\_double::mantissa1

Definition at line 236 of file endian\_convert.c.

#### 6.276.2.2 unsigned int vax\_double::exp

Definition at line 237 of file endian\_convert.c.

#### 6.276.2.3 unsigned int vax\_double::sign

Definition at line 238 of file endian\_convert.c.

#### 6.276.2.4 unsigned int vax\_double::mantissa2

Definition at line 239 of file endian\_convert.c.

#### 6.276.2.5 unsigned int vax\_double::mantissa3

Definition at line 240 of file endian\_convert.c.

#### 6.276.2.6 unsigned int vax\_double::mantissa4

Definition at line 241 of file endian\_convert.c.

The documentation for this struct was generated from the following file:

- libclasses/**endian\_convert.c**

## 6.277 vax\_single Struct Reference

### Public Attributes

- unsigned int **mantissa1**: 7
- unsigned int **exp**: 8
- unsigned int **sign**: 1
- unsigned int **mantissa2**: 16

### 6.277.1 Detailed Description

Definition at line 179 of file `endian_convert.c`.

### 6.277.2 Member Data Documentation

#### 6.277.2.1 unsigned int vax\_single::mantissa1

Definition at line 180 of file `endian_convert.c`.

#### 6.277.2.2 unsigned int vax\_single::exp

Definition at line 181 of file `endian_convert.c`.

#### 6.277.2.3 unsigned int vax\_single::sign

Definition at line 182 of file `endian_convert.c`.

#### 6.277.2.4 unsigned int vax\_single::mantissa2

Definition at line 183 of file `endian_convert.c`.

The documentation for this struct was generated from the following file:

- `libclasses/endian_convert.c`

# Chapter 7

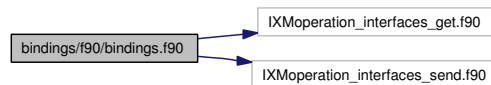
## LIBISIS File Documentation

### 7.1 bindings/f90/bindings.f90 File Reference

```
#include "IXMoperation_interfaces_get.f90"
```

```
#include "IXMoperation_interfaces_send.f90"
```

Include dependency graph for bindings.f90:



#### Defines

- #define IXD\_NAME Char
- #define IXD\_TYPE character(len=\*)
- #define IXD\_NAME i4b
- #define IXD\_TYPE integer(i4b)
- #define IXD\_NAME dp
- #define IXD\_TYPE real(dp)
- #define IXD\_NAME Logical
- #define IXD\_TYPE logical
- #define IXD\_NAME dp1
- #define IXD\_TYPE real(dp)
- #define IXD\_DIMS :
- #define IXD\_NAME dp2
- #define IXD\_TYPE real(dp)
- #define IXD\_DIMS :,:
- #define IXD\_NAME dp3
- #define IXD\_TYPE real(dp)
- #define IXD\_DIMS :,::
- #define IXD\_NAME dp4
- #define IXD\_TYPE real(dp)
- #define IXD\_DIMS :,:,::
- #define IXD\_NAME i1

- #define IXD\_TYPE integer(i4b)
- #define IXD\_DIMS :
- #define IXD\_NAME i2
- #define IXD\_TYPE integer(i4b)
- #define IXD\_DIMS :,:
- #define IXD\_NAME i3
- #define IXD\_TYPE integer(i4b)
- #define IXD\_DIMS :,,::
- #define IXD\_NAME i4
- #define IXD\_TYPE integer(i4b)
- #define IXD\_DIMS :,,:,::
- #define IXD\_NAME c1
- #define IXD\_TYPE character(len=\*)
- #define IXD\_DIMS :
- #define IXD\_NAME Ptrdp1
- #define IXD\_TYPE real(dp),pointer
- #define IXD\_DIMS :
- #define IXD\_NAME Ptrdp2
- #define IXD\_TYPE real(dp),pointer
- #define IXD\_DIMS :,:
- #define IXD\_NAME Ptrdp3
- #define IXD\_TYPE real(dp),pointer
- #define IXD\_DIMS :,,::
- #define IXD\_NAME Ptrdp4
- #define IXD\_TYPE real(dp),pointer
- #define IXD\_DIMS :,,:,::
- #define IXD\_NAME Ptri1
- #define IXD\_TYPE integer(i4b),pointer
- #define IXD\_DIMS :
- #define IXD\_NAME Ptri2
- #define IXD\_TYPE integer(i4b),pointer
- #define IXD\_DIMS :,:
- #define IXD\_NAME Ptri3
- #define IXD\_TYPE integer(i4b),pointer
- #define IXD\_DIMS :,,::
- #define IXD\_NAME Ptri4
- #define IXD\_TYPE integer(i4b),pointer
- #define IXD\_DIMS :,,:,::
- #define IXD\_NAME Allocdp1
- #define IXD\_TYPE real(dp),allocatable
- #define IXD\_DIMS :
- #define IXD\_NAME Allocdp2
- #define IXD\_TYPE real(dp),allocatable
- #define IXD\_DIMS :,:
- #define IXD\_NAME Allocdp3
- #define IXD\_TYPE real(dp),allocatable
- #define IXD\_DIMS :,,::
- #define IXD\_NAME Allocdp4
- #define IXD\_TYPE real(dp),allocatable
- #define IXD\_DIMS :,,:,::

- `#define IXD_NAME Alloci1`
- `#define IXD_TYPE integer(i4b),allocatable`
- `#define IXD_DIMS :`
- `#define IXD_NAME Alloci2`
- `#define IXD_TYPE integer(i4b),allocatable`
- `#define IXD_DIMS ,:`
- `#define IXD_NAME Alloci3`
- `#define IXD_TYPE integer(i4b),allocatable`
- `#define IXD_DIMS ,,::`
- `#define IXD_NAME Alloci4`
- `#define IXD_TYPE integer(i4b),allocatable`
- `#define IXD_DIMS ,,:,::`
- `#define IXD_NAME Allocc1`
- `#define IXD_TYPE character(len=*),allocatable`
- `#define IXD_DIMS :`
- `#define IXD_NAME Char`
- `#define IXD_TYPE character(len=*)`
- `#define IXD_NAME i4b`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_NAME dp`
- `#define IXD_TYPE real(dp)`
- `#define IXD_NAME Logical`
- `#define IXD_TYPE logical`
- `#define IXD_NAME dp1`
- `#define IXD_TYPE real(dp)`
- `#define IXD_DIMS :`
- `#define IXD_NAME dp2`
- `#define IXD_TYPE real(dp)`
- `#define IXD_DIMS ,:`
- `#define IXD_NAME dp3`
- `#define IXD_TYPE real(dp)`
- `#define IXD_DIMS ,,::`
- `#define IXD_NAME dp4`
- `#define IXD_TYPE real(dp)`
- `#define IXD_DIMS ,,:,::`
- `#define IXD_NAME i1`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_DIMS :`
- `#define IXD_NAME i2`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_DIMS ,:`
- `#define IXD_NAME i3`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_DIMS ,,::`
- `#define IXD_NAME i4`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_DIMS ,,:,::`
- `#define IXD_NAME c1`
- `#define IXD_TYPE character(len=*)`
- `#define IXD_DIMS :`

## Functions

- subroutine `IXBwrite_line` (`line`, `status`)
- `integer(cpointer_t)` `IXBAllocArrayDescriptor` (`ndims`, `dims_array`, `array_type`)
- subroutine `IXBdeallocArrayDescriptor` (`external_ptr`)
- `integer(cpointer_t)` `IXBgetArrayData` (`external_ptr`)
- `integer(cpointer_t)` `IXBexternalMakeResult` (`external_ptr`, `fortran_alloc`)
- subroutine `IXBcreateBindingPLHS` (`plhs`, `prhs`, `s`)
- `integer(cpointer_t)` `IXBcreateBindingFieldIfNeeded` (`plhs`, `field`, `array_index`, `s`)
- subroutine `IXBgetFieldFromBinding` (`prhs`, `field`, `field_num`, `array_index`, `op_count`, `array_ptr`, `status`)
- subroutine `IXBsendFieldToBinding` (`plhs`, `field`, `field_num`, `array_index`, `op_count`, `marray`, `status`)
- `integer` `IXBgetNumberOfElements` (`external_ptr`, `status`)
- `integer(cpointer_t)` `IXBcreateClassArray` (`class_name`, `n`, `s`)

## 7.1.1 Define Documentation

7.1.1.1 `#define IXD_DIMS :`

7.1.1.2 `#define IXD_DIMS ::,,: :`

7.1.1.3 `#define IXD_DIMS ::,:`

7.1.1.4 `#define IXD_DIMS :,:`

7.1.1.5 `#define IXD_DIMS :`

7.1.1.6 `#define IXD_DIMS ::,,: :`

7.1.1.7 `#define IXD_DIMS ::,:`

7.1.1.8 `#define IXD_DIMS :,:`

7.1.1.9 `#define IXD_DIMS :`

7.1.1.10 `#define IXD_DIMS :`

7.1.1.11 `#define IXD_DIMS ::,,: :`

7.1.1.12 `#define IXD_DIMS ::,:`

7.1.1.13 `#define IXD_DIMS :,:`

7.1.1.14 `#define IXD_DIMS :`

7.1.1.15 `#define IXD_DIMS ::,,: :`

7.1.1.16 `#define IXD_DIMS ::,:`

7.1.1.17 `#define IXD_DIMS :,:`

7.1.1.18 `#define IXD_DIMS :`

7.1.1.19 `#define IXD_DIMS ::,,: :`

7.1.1.20 `#define IXD_DIMS ::,:`

7.1.1.21 `#define IXD_DIMS :,:`

7.1.1.22 `#define IXD_DIMS :`

7.1.1.23 `#define IXD_DIMS ::,,: :`

7.1.1.24 `#define IXD_DIMS ::,:`

7.1.1.25 `#define IXD_DIMS :,:`

7.1.1.26 `#define IXD_DIMS :`

7.1.1.27 `#define IXD_DIMS :`

---

Generated on Mon Feb 19 18:32:25 2007 for LIBISIS by Doxygen

7.1.1.28 `#define IXD_DIMS ::,,: :`

7.1.1.29 `#define IXD_DIMS ::,:`

7.1.1.30 `#define IXD_DIMS :,:`

### 7.1.2.2 `integer(cpointer_t) IXBcreateBindingFieldIfNeeded (integer(cpointer_t) plhs, character(len=*) field, integer array index, type(IXTstatus) s)`

Definition at line 159 of file `bindings.f90`.

References `IXMio::IXFwrite_line()`.

Referenced by `IXMoperation::IXFoperationStart()`.

Here is the call graph for this function:



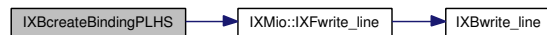
### 7.1.2.3 `subroutine IXBcreateBindingPLHS (integer(cpointer_t),target plhs, integer(cpointer_t) prhs, type(IXTstatus) s)`

Definition at line 139 of file `bindings.f90`.

References `IXMio::IXFwrite_line()`.

Referenced by `IXMoperation::runOperationCharacter()`, `IXMoperation::runOperationInteger()`, `IXMoperation::runOperationLogical()`, and `IXMoperation::runOperationReal()`.

Here is the call graph for this function:

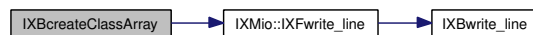


### 7.1.2.4 `integer(cpointer_t) IXBcreateClassArray (character(len=*) class_name, integer n, type(IXTstatus) s)`

Definition at line 217 of file `bindings.f90`.

References `IXMio::IXFwrite_line()`.

Here is the call graph for this function:



### 7.1.2.5 `subroutine IXBdeallocArrayDescriptor (integer(cpointer_t) external_ptr)`

Definition at line 69 of file `bindings.f90`.

### 7.1.2.6 `integer(cpointer_t) IXBexternalMakeResult (integer(cpointer_t) external_ptr, logical fortran_alloc)`

Definition at line 118 of file `bindings.f90`.



**7.1.2.7** `integer(cpointer_t) IXBgetArrayData (integer(cpointer_t) external_ptr)`

Definition at line 93 of file bindings.f90.

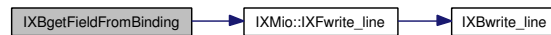
**7.1.2.8** `subroutine IXBgetFieldFromBinding (integer(cpointer_t) prhs, character(len=*) field, integer field_num, integer array_index, integer op_count, integer(cpointer_t) array_ptr, type(IXTstatus) status)`

Definition at line 180 of file bindings.f90.

References IXMio::IXFwrite\_line().

Referenced by IXMoperation::IXFoperationArrayInit(), and IXMoperation::IXFoperationStart().

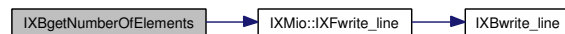
Here is the call graph for this function:

**7.1.2.9** `integer IXBgetNumberOfElements (integer(cpointer_t) external_ptr, type(IXTstatus) status)`

Definition at line 205 of file bindings.f90.

References IXMio::IXFwrite\_line().

Here is the call graph for this function:

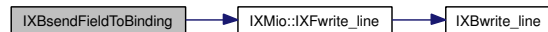
**7.1.2.10** `subroutine IXBsendFieldToBinding (integer(cpointer_t) plhs, character(len=*) field, integer field_num, integer array_index, integer op_count, integer(cpointer_t) marray, type(IXTstatus) status)`

Definition at line 193 of file bindings.f90.

References IXMio::IXFwrite\_line().

Referenced by IXMoperation::IXFoperationArrayInit().

Here is the call graph for this function:

**7.1.2.11** `subroutine IXBwrite_line (character(len=*) line, type(IXTstatus) status)`

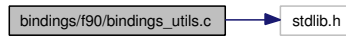
Definition at line 22 of file bindings.f90.

Referenced by IXMio::IXFwrite\_line().

## 7.2 bindings/f90/bindings\_utils.c File Reference

```
#include <stdlib.h>
```

Include dependency graph for bindings\_utils.c:



### Functions

- void \* **ixicalloc\_** (int \*size)
- int **ixicdealloc\_** (void \*\*address)

#### 7.2.1 Function Documentation

##### 7.2.1.1 void\* ixicalloc\_ (int \* size)

Definition at line 21 of file bindings\_utils.c.

##### 7.2.1.2 int ixicdealloc\_ (void \*\* address)

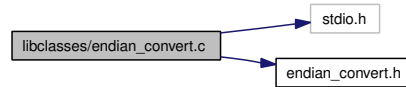
Definition at line 37 of file bindings\_utils.c.

## 7.3 libclasses/endian\_convert.c File Reference

```
#include <stdio.h>
```

```
#include "endian_convert.h"
```

Include dependency graph for endian\_convert.c:



### Classes

- struct ieee\_single
- struct vax\_single
- struct sgl\_limits\_struct
- struct ieee\_double
- struct vax\_double
- struct dbl\_limits

### Defines

- #define swap\_int(a)
- #define swap\_short(a) ( ((a & 0xff) << 8) | (((unsigned short)(a) >> 8) )
- #define IEEEFP 1
- #define VAX\_SNG\_BIAS 0x81
- #define IEEE\_SNG\_BIAS 0x7f
- #define mmax\_sgl\_limits[0]
- #define mmin\_sgl\_limits[1]
- #define VAX\_DBL\_BIAS 0x81
- #define IEEE\_DBL\_BIAS 0x3ff
- #define MASK(nbits) ((1 << nbits) - 1)
- #define maybe\_flip\_bytes(\_\_p, \_\_n)

### Functions

- unsigned short local\_to\_vax\_short (const unsigned short \*s)
- unsigned short vax\_to\_local\_short (const unsigned short \*s)
- unsigned local\_to\_vax\_int (const int \*i)
- unsigned vax\_to\_local\_int (const int \*i)
- void local\_to\_vax\_shorts (unsigned short \*sa, const int \*n)
- void vax\_to\_local\_shorts (unsigned short \*sa, const int \*n)
- void local\_to\_vax\_ints (int \*ia, const int \*n)
- void vax\_to\_local\_ints (int \*ia, const int \*n)
- void vaxf\_to\_local (float \*val, const int \*n, int \*errcode)
- void local\_to\_vaxf (float \*val, const int \*n, int \*errcode)
- void ieee\_float\_to\_local (float \*val, const int \*n, int \*errcode)
- void ieee\_double\_to\_local (double \*val, const int \*n, int \*errcode)
- void local\_to\_ieee\_float (float \*val, const int \*n, int \*errcode)
- void local\_to\_ieee\_double (double \*val, const int \*n, int \*errcode)

### 7.3.1 Define Documentation

#### 7.3.1.1 `#define IEEE_DBL_BIAS 0x3ff`

Definition at line 248 of file `endian_convert.c`.

#### 7.3.1.2 `#define IEEE_SNG_BIAS 0x7f`

Definition at line 189 of file `endian_convert.c`.

#### 7.3.1.3 `#define IEEEFP 1`

Definition at line 130 of file `endian_convert.c`.

#### 7.3.1.4 `#define MASK(nbits) ((1 << nbits) - 1)`

Definition at line 249 of file `endian_convert.c`.

Referenced by `IXMmask::IXFread_mask()`.

#### 7.3.1.5 `#define maybe_flip_bytes(__p, __n)`

Definition at line 276 of file `endian_convert.c`.

#### 7.3.1.6 `#define mmax sgl_limits[0]`

Definition at line 201 of file `endian_convert.c`.

#### 7.3.1.7 `#define mmin sgl_limits[1]`

Definition at line 202 of file `endian_convert.c`.

#### 7.3.1.8 `#define swap_int(a)`

**Value:**

```
( ((a) << 24) | \
    (((a) << 8) & 0x00ff0000) | \
    (((a) >> 8) & 0x0000ff00) | \
    ((unsigned long)(a) >>24) )
```

Definition at line 29 of file `endian_convert.c`.

Referenced by `local_to_vax_int()`, `local_to_vax_ints()`, `vax_to_local_int()`, and `vax_to_local_ints()`.

#### 7.3.1.9 `#define swap_short(a) ( ((a & 0xff) << 8) | ((unsigned short)(a) >> 8) )`

Definition at line 34 of file `endian_convert.c`.

Referenced by `local_to_vax_short()`, `local_to_vax_shorts()`, `vax_to_local_short()`, and `vax_to_local_shorts()`.

#### 7.3.1.10 `#define VAX_DBL_BIAS 0x81`

Definition at line 247 of file `endian_convert.c`.

#### 7.3.1.11 `#define VAX_SNG_BIAS 0x81`

Definition at line 188 of file `endian_convert.c`.

### 7.3.2 Function Documentation

#### 7.3.2.1 `void ieee_double_to_local (double * val, const int * n, int * errcode)`

Definition at line 438 of file `endian_convert.c`.

#### 7.3.2.2 `void ieee_float_to_local (float * val, const int * n, int * errcode)`

Definition at line 416 of file `endian_convert.c`.

#### 7.3.2.3 `void local_to_ieee_double (double * val, const int * n, int * errcode)`

Definition at line 484 of file `endian_convert.c`.

#### 7.3.2.4 `void local_to_ieee_float (float * val, const int * n, int * errcode)`

Definition at line 461 of file `endian_convert.c`.

#### 7.3.2.5 `unsigned local_to_vax_int (const int * i)`

Definition at line 56 of file `endian_convert.c`.

References `swap_int`.

#### 7.3.2.6 `void local_to_vax_ints (int * ia, const int * n)`

Definition at line 98 of file `endian_convert.c`.

References `IXMoperation:i`, and `swap_int`.

#### 7.3.2.7 `unsigned short local_to_vax_short (const unsigned short * s)`

Definition at line 38 of file `endian_convert.c`.

References `swap_short`.

**7.3.2.8 void local\_to\_vax\_shorts (unsigned short \* *sa*, const int \* *n*)**

Definition at line 74 of file endian\_convert.c.

References IXMoperation:i, and swap\_short.

**7.3.2.9 void local\_to\_vaxf (float \* *val*, const int \* *n*, int \* *errcode*)**

Definition at line 396 of file endian\_convert.c.

**7.3.2.10 unsigned vax\_to\_local\_int (const int \* *i*)**

Definition at line 65 of file endian\_convert.c.

References swap\_int.

**7.3.2.11 void vax\_to\_local\_ints (int \* *ia*, const int \* *n*)**

Definition at line 111 of file endian\_convert.c.

References IXMoperation:i, and swap\_int.

**7.3.2.12 unsigned short vax\_to\_local\_short (const unsigned short \* *s*)**

Definition at line 47 of file endian\_convert.c.

References swap\_short.

**7.3.2.13 void vax\_to\_local\_shorts (unsigned short \* *sa*, const int \* *n*)**

Definition at line 86 of file endian\_convert.c.

References IXMoperation:i, and swap\_short.

**7.3.2.14 void vaxf\_to\_local (float \* *val*, const int \* *n*, int \* *errcode*)**

Definition at line 363 of file endian\_convert.c.

## 7.4 libclasses/endian\_convert.h File Reference

This graph shows which files directly or indirectly include this file:



### Defines

- `#define fort_int int`
- `#define FORTRAN_CALL`

### Functions

- unsigned short `local_to_vax_short (const unsigned short *s)`
- unsigned short `vax_to_local_short (const unsigned short *s)`
- unsigned local\_to\_vax\_int (const int \*i)
- unsigned vax\_to\_local\_int (const int \*i)
- void `local_to_vax_shorts (unsigned short *sa, const int *n)`
- void `vax_to_local_shorts (unsigned short *sa, const int *n)`
- void `local_to_vax_ints (int *ia, const int *n)`
- void `vax_to_local_ints (int *ia, const int *n)`
- void `vaxf_to_local (float *val, const int *n, int *errcode)`
- void `local_to_vaxf (float *val, const int *n, int *errcode)`
- void `local_to_ieee_float (float *val, const int *n, int *errcode)`
- void `local_to_ieee_double (double *val, const int *n, int *errcode)`
- void `ieee_float_to_local (float *val, const int *n, int *errcode)`
- void `ieee_double_to_local (double *val, const int *n, int *errcode)`

### 7.4.1 Define Documentation

#### 7.4.1.1 `#define fort_int int`

Definition at line 10 of file `endian_convert.h`.

#### 7.4.1.2 `#define FORTRAN_CALL`

Definition at line 14 of file `endian_convert.h`.

### 7.4.2 Function Documentation

#### 7.4.2.1 `void ieee_double_to_local (double * val, const int * n, int * errcode)`

Definition at line 438 of file `endian_convert.c`.

#### 7.4.2.2 `void ieee_float_to_local (float * val, const int * n, int * errcode)`

Definition at line 416 of file `endian_convert.c`.

**7.4.2.3 void local\_to\_ieee\_double (double \* *val*, const int \* *n*, int \* *errcode*)**

Definition at line 484 of file endian\_convert.c.

**7.4.2.4 void local\_to\_ieee\_float (float \* *val*, const int \* *n*, int \* *errcode*)**

Definition at line 461 of file endian\_convert.c.

**7.4.2.5 unsigned local\_to\_vax\_int (const int \* *i*)**

Definition at line 56 of file endian\_convert.c.

References swap\_int.

**7.4.2.6 void local\_to\_vax\_ints (int \* *ia*, const int \* *n*)**

Definition at line 98 of file endian\_convert.c.

References IXMoperation::i, and swap\_int.

**7.4.2.7 unsigned short local\_to\_vax\_short (const unsigned short \* *s*)**

Definition at line 38 of file endian\_convert.c.

References swap\_short.

**7.4.2.8 void local\_to\_vax\_shorts (unsigned short \* *sa*, const int \* *n*)**

Definition at line 74 of file endian\_convert.c.

References IXMoperation::i, and swap\_short.

**7.4.2.9 void local\_to\_vaxf (float \* *val*, const int \* *n*, int \* *errcode*)**

Definition at line 396 of file endian\_convert.c.

**7.4.2.10 unsigned vax\_to\_local\_int (const int \* *i*)**

Definition at line 65 of file endian\_convert.c.

References swap\_int.

**7.4.2.11 void vax\_to\_local\_ints (int \* *ia*, const int \* *n*)**

Definition at line 111 of file endian\_convert.c.

References IXMoperation::i, and swap\_int.



**7.4.2.12 unsigned short vax\_to\_local\_short (const unsigned short \* *s*)**

Definition at line 47 of file endian\_convert.c.

References swap\_short.

**7.4.2.13 void vax\_to\_local\_shorts (unsigned short \* *sa*, const int \* *n*)**

Definition at line 86 of file endian\_convert.c.

References IXMoperation::i, and swap\_short.

**7.4.2.14 void vaxf\_to\_local (float \* *val*, const int \* *n*, int \* *errcode*)**

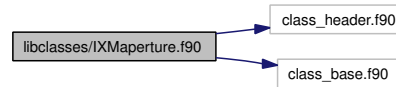
Definition at line 363 of file endian\_convert.c.

## 7.5 libclasses/IXMaperture.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMaperture.f90:



### Namespaces

- namespace `IXMaperture`

### Classes

- struct `IXMaperture::IXTaperture`

### Defines

- `#define IXD_TYPE aperture`
- `#define IXD_DESCRIPTION "IXTaperture class"`
- `#define IXD_TYPE aperture`
- `#define IXD_SQTYPE 'aperture'`

### Functions

- subroutine `IXMaperture::IXFdestroy_aperture (arg, status)`
- subroutine `IXMaperture::IXFcheck_aperture (aperture, status)`
- subroutine `IXMaperture::IXFoperation_run_aperture (op, field, arg, status)`
- subroutine `IXMaperture::IXFcreate_aperture (aperture, name, distance, shape, horiz_posn, vert_posn, width, height, radius, status)`
- subroutine `IXMaperture::IXFset_aperture (aperture, status, name, distance, shape, horiz_posn, vert_posn, width, height, radius, ref)`
- subroutine `IXMaperture::IXFget_aperture (aperture, status, name, distance, shape, horiz_posn, vert_posn, width, height, radius, wout)`

#### 7.5.1 Define Documentation

7.5.1.1 `#define IXD_DESCRIPTION "IXTaperture class"`

7.5.1.2 `#define IXD_SQTYPE 'aperture'`

7.5.1.3 `#define IXD_TYPE aperture`

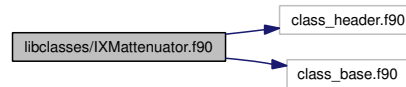
7.5.1.4 `#define IXD_TYPE aperture`

## 7.6 libclasses/IXMattenuator.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMattenuator.f90:



### Namespaces

- namespace **IXMattenuator**

### Classes

- struct **IXMattenuator::IXTattenuator**

### Defines

- `#define IXD_TYPE attenuator`
- `#define IXD_DESCRIPTION "IXTattenuator class"`
- `#define IXD_TYPE attenuator`
- `#define IXD_SQTYPE 'attenuator'`

### Functions

- subroutine **IXMattenuator::IXFdestroy\_attenuator** (arg, status)
- subroutine **IXMattenuator::IXFcheck\_attenuator** (attenuator, status)
- subroutine **IXMattenuator::IXFoperation\_run\_attenuator** (op, field, arg, status)
- subroutine **IXMattenuator::IXFcreate\_attenuator** (attenuator, name, distance, material, thickness, attenuation, status)
- subroutine **IXMattenuator::IXFset\_attenuator** (attenuator, status, name, distance, material, thickness, attenuation, ref)
- subroutine **IXMattenuator::IXFget\_attenuator** (attenuator, status, name, distance, material, thickness, attenuation, wout)

#### 7.6.1 Define Documentation

7.6.1.1 `#define IXD_DESCRIPTION "IXTattenuator class"`

7.6.1.2 `#define IXD_SQTYPE 'attenuator'`

7.6.1.3 `#define IXD_TYPE attenuator`

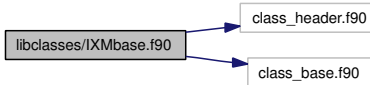
7.6.1.4 `#define IXD_TYPE attenuator`

## 7.7 libclasses/IXMbase.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMbase.f90:



### Namespaces

- namespace `IXMbase`

### Classes

- struct `IXMbase::IXTbase`
- interface `IXMbase::IXFget_real_array`
- interface `IXMbase::IXFget_integer_array`
- interface `IXMbase::IXFset_real_array`
- interface `IXMbase::IXFset_integer_array`

### Defines

- `#define IXD_TYPE base`
- `#define IXD_SQTYPE 'base'`
- `#define IXD_NO_BASE 1`
- `#define IXD_TYPE base`
- `#define IXD_SQTYPE 'base'`
- `#define IXD_NO_BASE 1`

### Functions

- subroutine `IXMbase::IXFcheck_base (arg, status)`
- logical `IXMbase::IXFinitialised_base (arg)`
- logical `IXMbase::IXFvalid_base (arg)`
- subroutine `IXMbase::IXFmark_valid_base (arg)`
- subroutine `IXMbase::IXFclear_valid_base (arg)`
- subroutine `IXMbase::IXFdestroy_base (arg, status)`
- subroutine `IXMbase::IXFcreate_base (arg, status)`
- subroutine `IXMbase::IXFoperation_run_base (op, field, arg, status)`
- subroutine `IXMbase::IXFset_base (var, status, entry_name, initialised, valid, ref)`
- subroutine `IXMbase::IXFget_base (var, status, entry_name, initialised, valid, wout)`
- subroutine `IXMbase::geti_1d (arr_in, status, arr_out)`
- subroutine `IXMbase::getr_1d (arr_in, status, arr_out)`

- subroutine IXMbase::geti\_2d (arr\_in, status, arr\_out)
- subroutine IXMbase::getr\_2d (arr\_in, status, arr\_out)
- subroutine IXMbase::seti\_1d (arr\_out, status, arr\_in)
- subroutine IXMbase::setr\_1d (arr\_out, status, arr\_in)
- subroutine IXMbase::seti\_2d (arr\_out, status, arr\_in)
- subroutine IXMbase::setr\_2d (arr\_out, status, arr\_in)

## Variables

- integer(i4b), parameter IXMbase::IXCobject\_initialised = 15738456
- character(len=short\_len), parameter IXMbase::IXCdetmask = 'detmaskfile'
- character(len=short\_len), parameter IXMbase::IXCmonmask = 'monmaskfile'
- character(len=short\_len), parameter IXMbase::IXCmaskfile = 'genericmaskfile'
- character(len=short\_len), parameter IXMbase::IXCdetmap = 'detmapfile'
- character(len=short\_len), parameter IXMbase::IXCmonmap = 'monmapfile'
- character(len=short\_len), parameter IXMbase::IXCmapfile = 'genericmapfile'
- character(len=short\_len), parameter IXMbase::IXCrawfile = 'rawfile'
- character(len=short\_len), parameter IXMbase::IXCfermi\_chopper = 'chopper'
- character(len=short\_len), parameter IXMbase::IXCsource = 'source'
- character(len=short\_len), parameter IXMbase::IXCchop\_inst = 'chop\_inst'
- character(len=short\_len), parameter IXMbase::IXCdiff\_inst = 'diff\_inst'
- character(len=short\_len), parameter IXMbase::IXCmoderator = 'moderator'
- character(len=short\_len), parameter IXMbase::IXCprograme = 'programe'
- character(len=short\_len), parameter IXMbase::IXCcommand\_line = 'command'
- character(len=short\_len), parameter IXMbase::IXCindi\_inst = 'indi\_inst'
- integer(i4b) IXMbase::IXCdiffraction = 0
- integer(i4b) IXMbase::IXCdirect = 1
- integer(i4b) IXMbase::IXCindirect = 2

### 7.7.1 Define Documentation

7.7.1.1 #define IXD\_NO\_BASE 1

7.7.1.2 #define IXD\_NO\_BASE 1

7.7.1.3 #define IXD\_SQTYPE 'base'

7.7.1.4 #define IXD\_SQTYPE 'base'

7.7.1.5 #define IXD\_TYPE base

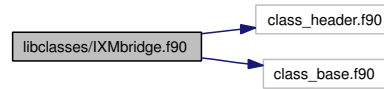
7.7.1.6 #define IXD\_TYPE base

## 7.8 libclasses/IXMbridge.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMbridge.f90:



### Namespaces

- namespace `IXMbridge`

### Classes

- struct `IXMbridge::IXTbridge`

### Defines

- `#define IXD_TYPE bridge`
- `#define IXD_DESCRIPTION "IXTbridge class"`
- `#define IXD_TYPE bridge`
- `#define IXD_SQTYPE 'bridge'`

### Functions

- subroutine `IXMbridge::IXFoperation_run_bridge (op, field, arg, status)`
- subroutine `IXMbridge::IXFcreate_bridge (bridge, ws_bridge, sw_bridge, status)`
- subroutine `IXMbridge::IXFcheck_bridge (arg, status)`
- subroutine `IXMbridge::IXFdestroy_bridge (bridge, status)`
- subroutine `IXMbridge::IXFset_bridge (bridge, status, ws_bridge, sw_bridge, ref)`
- subroutine `IXMbridge::IXFget_bridge (bridge, status, ws_bridge, sw_bridge, wout)`
- subroutine `IXMbridge::IXFget_ptr_bridge (bridge, ws_bridge, sw_bridge)`
- logical `IXMbridge::IXFcompare_bridge (bridge1, bridge2)`
- subroutine `IXMbridge::IXFpopulate_bridge (bridge, map, mask, status)`

## 7.8.1 Define Documentation

7.8.1.1 `#define IXD_DESCRIPTION "IXTbridge class"`

7.8.1.2 `#define IXD_SQTYPE 'bridge'`

7.8.1.3 `#define IXD_TYPE bridge`

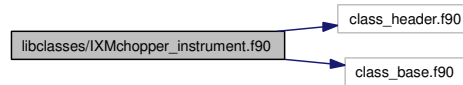
7.8.1.4 `#define IXD_TYPE bridge`

## 7.9 libclasses/IXMchopper\_instrument.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMchopper\_instrument.f90:



### Namespaces

- namespace `IXMchopper_instrument`

### Classes

- struct `IXMchopper_instrument::IXTchopper_instrument`
- interface `IXMchopper_instrument::IXFget_ptr`
- interface `IXMchopper_instrument::IXFget_emode`

### Defines

- `#define IXD_TYPE chopper_instrument`
- `#define IXD_DESCRIPTION "IXTchopper_instrument class"`
- `#define IXD_TYPE chopper_instrument`
- `#define IXD_SQTYPE 'chopper_instrument'`

### Functions

- subroutine `IXMchopper_instrument::get_ptr (ci_ptr)`
- subroutine `IXMchopper_instrument::get_emode (c_inst, status, emode, efixd)`
- subroutine `IXMchopper_instrument::IXFoperation_run_chopper_instrument (op, field, arg, status)`
- subroutine `IXMchopper_instrument::IXFcreate_chopper_instrument (chopper_instrument, monochromator, status)`
- subroutine `IXMchopper_instrument::IXFcheck_chopper_instrument (arg, status)`
- subroutine `IXMchopper_instrument::IXFdestroy_chopper_instrument (chopper_instrument, status)`
- subroutine `IXMchopper_instrument::IXFset_chopper_instrument (chopper_instrument, status, monochromator, ref)`
- subroutine `IXMchopper_instrument::IXFget_chopper_instrument (chopper_instrument, status, monochromator, wout)`
- subroutine `IXMchopper_instrument::IXFget_ptr_chopper_instrument (chopper_instrument, monochromator)`
- subroutine `IXMchopper_instrument::IXFpopulate_chopper_instrument (ci, dso, status)`



## Variables

- type(IXTchopper\_instrument), target, save **IXMchopper\_instrument::chop\_inst**

### 7.9.1 Define Documentation

7.9.1.1 **#define** IXD\_DESCRIPTION "IXTchopper\_instrument class"

7.9.1.2 **#define** IXD\_SQTYPE 'chopper\_instrument'

7.9.1.3 **#define** IXD\_TYPE chopper\_instrument

7.9.1.4 **#define** IXD\_TYPE chopper\_instrument

## 7.10 libclasses/IXMcrystalanalyser.f90 File Reference

### Namespaces

- namespace **IXMcrystalanalyser**

### Classes

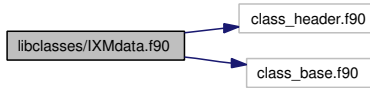
- struct **IXMcrystalanalyser::IXTcrystalanalyser**

## 7.11 libclasses/IXMdata.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMdata.f90:



### Namespaces

- namespace **IXMdata**

### Classes

- struct **IXMdata::IXTdata**
- interface **IXMdata::IXFpopulate\_data**

### Defines

- `#define IXD_TYPE data`
- `#define IXD_DESCRIPTION "IXTdata class"`
- `#define IXD_TYPE data`
- `#define IXD_SQTYPE 'data'`

### Functions

- subroutine **IXMdata::IXFget\_ptr\_data** (data, datasets, workspace, bridge)
- subroutine **IXMdata::IXFget\_data** (data, status, datasets, workspace, bridge, wout)
- subroutine **IXMdata::IXFget\_alloc\_data** (data, status, datasets, workspace, bridge, wout)
- subroutine **IXMdata::IXFoperation\_run\_data** (op, field, arg, status)
- subroutine **IXMdata::IXFset\_data** (data, status, datasets, workspace, bridge, ref)
- subroutine **IXMdata::IXFdestroy\_data** (data, status)
- subroutine **IXMdata::IXFcreate\_data** (data, datasets, workspace, bridge, status)
- subroutine **IXMdata::IXFcheck\_data** (data, status)
- subroutine **IXMdata::IXFbackground\_data** (data, min, max, status)
- subroutine **IXMdata::popunitsrebin\_datasets** (data, spe\_ptr, det\_ptr, L1, efixed, emode, rbparams, units\_out, status)
- subroutine **IXMdata::IXFunits\_data** (data, status, emode, efixed, L1, units\_out)
- subroutine **IXMdata::IXFunits\_rebin\_data** (data, status, emode, efixed, L1, units\_out, Xdesc, Xref)

- subroutine IXMdata::sum\_data (data, status)
- subroutine IXMdata::IXFrebin\_data (data, status, Xdesc, Xref)
- subroutine IXMdata::IXFremap\_data (detdata, dso, dmap, dmask, det\_ptr, spe\_ptr, status)
- subroutine IXMdata::remap\_data (data, newbridge, lookup, status)
- subroutine IXMdata::IXFgetei\_data (mondata, Ei, L1, status)
- subroutine IXMdata::IXFpeakarea\_data (mondata, L1, ei, index, area, status)
- subroutine IXMdata::IXFcomparebridge\_data (data1, data2, ident, status)
- subroutine IXMdata::IXFpopulate\_data\_dso (data, period, map, mask, status, inputsource, dso, det\_ptr, spe\_ptr, efixed, emode, L1, uflag, rflag, rbparams, units\_out, opt, bgrd)
- subroutine IXMdata::populate\_common (data, period, status, inputsource, det\_ptr, spe\_ptr)

### 7.11.1 Define Documentation

7.11.1.1 #define IXD\_DESCRIPTION "IXTdata class"

7.11.1.2 #define IXD\_SQTYPE 'data'

7.11.1.3 #define IXD\_TYPE data

7.11.1.4 #define IXD\_TYPE data

## 7.12 libclasses/IXMdata\_source.f90 File Reference

### Namespaces

- namespace `IXMdata_source`

### Classes

- struct `IXMdata_source::IXTdata_source`
- interface `IXMdata_source::IXFfile_read`
- interface `IXMdata_source::IXFfile_write`
- interface `IXMdata_source::IXFcheck`

### Functions

- subroutine `IXMdata_source::IXFcheck_data_source` (arg, status)
- subroutine `IXMdata_source::IXFcheck_array_data_source` (w1, s)
- subroutine `IXMdata_source::IXFfile_read_data_source` (value, fio, name, status)
- subroutine `IXMdata_source::IXFfile_write_data_source` (value, fio, name, status)
- subroutine `IXMdata_source::IXFcreate_data_source` (data\_source, path, datatype, status)
- subroutine `IXMdata_source::IXFdestroy_data_source` (data\_source, status)
- subroutine `IXMdata_source::IXFset_data_source` (data\_source, status, path, datatype, ref)
- subroutine `IXMdata_source::IXFget_data_source` (data\_source, status, path, datatype, wout)
- subroutine `IXMdata_source::IXFget_ptr_data_source` (data\_source, path, datatype)
- subroutine `IXMdata_source::IXFfindpath_data_source` (dso, rpath, dtype, found, status, index)
- subroutine `IXMdata_source::IXFadditem_data_source` (dso, path, dtype, status)
- subroutine `IXMdata_source::IXFdelitem_data_source` (dso, dtype, status)
- subroutine `IXMdata_source::IXFreplaceitem_data_source` (dso, path, dtype, status)

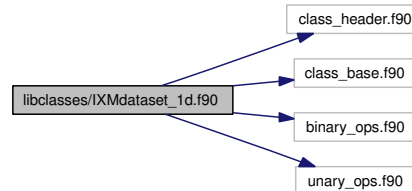
### Variables

- integer(i4b), parameter `IXMdata_source::IXCdso_initlength = 20`

## 7.13 libclasses/IXMdataset\_1d.f90 File Reference

```
#include "class_header.f90"
#include "class_base.f90"
#include "binary_ops.f90"
#include "unary_ops.f90"
```

Include dependency graph for IXMdataset\_1d.f90:



### Namespaces

- namespace `IXMdataset_1d`

### Classes

- struct `IXMdataset_1d::IXTdataset_1d`
- interface `IXMdataset_1d::IXFplus_dataset_1d`
- interface `IXMdataset_1d::IXFplus`
- interface `IXMdataset_1d::IXFminus_dataset_1d`
- interface `IXMdataset_1d::IXFminus`
- interface `IXMdataset_1d::IXFtimes_dataset_1d`
- interface `IXMdataset_1d::IXFtimes`
- interface `IXMdataset_1d::IXFdivide_dataset_1d`
- interface `IXMdataset_1d::IXFdivide`
- interface `IXMdataset_1d::IXFpower_dataset_1d`
- interface `IXMdataset_1d::IXFpower`
- interface `IXMdataset_1d::IXFexp`
- interface `IXMdataset_1d::IXFlog`
- interface `IXMdataset_1d::IXFsin`
- interface `IXMdataset_1d::IXFcos`
- interface `IXMdataset_1d::IXFtan`
- interface `IXMdataset_1d::IXFsinh`
- interface `IXMdataset_1d::IXFcosh`
- interface `IXMdataset_1d::IXFtanh`
- interface `IXMdataset_1d::IXFunspike`
- interface `IXMdataset_1d::interface`

## Defines

- #define IXD\_TYPE dataset\_1d
- #define IXD\_DESCRIPTION "IXTdataset\_1d class"
- #define IXD\_TYPE dataset\_1d
- #define IXD\_SQTYPE 'dataset\_1d'
- #define IXD\_NAME plus\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Plus
- #define IXD\_NAME minus\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Minus
- #define IXD\_NAME times\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Times
- #define IXD\_NAME divide\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Divide
- #define IXD\_NAME power\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Power
- #define IXD\_NAME log\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Log
- #define IXD\_NAME exp\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Exp
- #define IXD\_NAME sin\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Sin
- #define IXD\_NAME cos\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Cos
- #define IXD\_NAME tan\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Tan
- #define IXD\_NAME sinh\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Sinh
- #define IXD\_NAME cosh\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Cosh
- #define IXD\_NAME tanh\_dataset\_1d
- #define IXD\_TYPE dataset\_1d
- #define IXD\_OPERATION Tanh
- #define IXD\_OPERATION Plus
- #define IXD\_TYPE dataset\_1d
- #define IXD\_DIMS :
- #define IXD\_OPERATION Minus
- #define IXD\_TYPE dataset\_1d

- #define IXD\_DIMS :
- #define IXD\_OPERATION Times
- #define IXD\_TYPE dataset\_1d
- #define IXD\_DIMS :
- #define IXD\_OPERATION Divide
- #define IXD\_TYPE dataset\_1d
- #define IXD\_DIMS :

## Functions

- subroutine IXMdataset\_1d::IXFget\_ptr\_dataset\_1d (w1, x, signal, error)
- subroutine IXMdataset\_1d::IXFdestroy\_dataset\_1d (w1d, status)
- subroutine IXMdataset\_1d::IXFget\_dataset\_1d (dataset\_1d, status, title, signal, error, s\_units, x, x\_units, x\_distribution, wout)
- subroutine IXMdataset\_1d::IXFget\_alloc\_dataset\_1d (w1, status, title, signal, error, s\_units, x, x\_units, x\_distribution, wout)
- subroutine IXMdataset\_1d::IXFmake\_dataset\_1d (dataset\_1d, nx, dist, hist, status)
- subroutine IXMdataset\_1d::IXFcreate\_dataset\_1d (dataset\_1d, title, signal, error, s\_units, x, x\_units, x\_distribution, status)
- subroutine IXMdataset\_1d::IXFcreatexye\_dataset\_1d (dataset\_1d, x, signal, error, status)
- subroutine IXMdataset\_1d::IXFset\_dataset\_1d (dataset\_1d, status, title, signal, error, s\_units, x, x\_units, x\_distribution, ref)
- subroutine IXMdataset\_1d::IXFoperation\_run\_dataset\_1d (op, field, arg, status)
- subroutine IXMdataset\_1d::IXFcheck\_dataset\_1d (w1, status)
- subroutine IXMdataset\_1d::IXFintegrate\_dataset\_1d (ires, w1, xmin\_in, xmax\_in, status)
- subroutine IXMdataset\_1d::IXFrebunch\_dataset\_1d (wres, w1, nbunch, status)
- subroutine IXMdataset\_1d::IXFrebin\_dataset\_1d (wres, status, w2, Xdesc, Xref)
- subroutine IXMdataset\_1d::IXFregroup\_dataset\_1d (wres, w1, param, status)
- subroutine IXMdataset\_1d::IXFshift\_dataset\_1d (wres, w1, status, shift)
- subroutine IXMdataset\_1d::setup\_binary\_op\_dataset\_1d (wres, w1, w2, status)
- subroutine IXMdataset\_1d::setup\_unary\_op\_dataset\_1d (wres, w1, status)
- subroutine IXMdataset\_1d::finish\_op\_dataset\_1d (wres, w1, status)
- type(IXTdataset\_1d) IXMdataset\_1d::IXFdataset\_1dPlusAAop (arg1, arg2)
- subroutine IXMdataset\_1d::IXFmake\_label\_dataset\_1d (d1d, x\_label, s\_label, status)
- subroutine IXMdataset\_1d::IXFderiv1\_dataset\_1d (wres, w1, status)
- subroutine IXMdataset\_1d::IXFderiv2\_dataset\_1d (wres, w1, status)
- logical IXMdataset\_1d::x\_hist (w1d)
- subroutine IXMdataset\_1d::IXFcatarray\_dataset\_1d (array1d, dataset1d, status)
- subroutine IXMdataset\_1d::setbase (d1d, name, status)
- subroutine IXMdataset\_1d::IXFunits\_dataset\_1d (d1d, status, emode, efixed, L1, L2, theta, delay, units\_out)
- subroutine IXMdataset\_1d::IXFunspike\_dataset\_1d (d1dout, d1d, status)



### 7.13.1 Define Documentation

7.13.1.1 `#define IXD_DESCRIPTION "IXTdataset_1d class"`

7.13.1.2 `#define IXD_DIMS :`

7.13.1.3 `#define IXD_DIMS :`

7.13.1.4 `#define IXD_DIMS :`

7.13.1.5 `#define IXD_DIMS :`

7.13.1.6 `#define IXD_NAME tanh_dataset_1d`

7.13.1.7 `#define IXD_NAME cosh_dataset_1d`

7.13.1.8 `#define IXD_NAME sinh_dataset_1d`

7.13.1.9 `#define IXD_NAME tan_dataset_1d`

7.13.1.10 `#define IXD_NAME cos_dataset_1d`

7.13.1.11 `#define IXD_NAME sin_dataset_1d`

7.13.1.12 `#define IXD_NAME exp_dataset_1d`

7.13.1.13 `#define IXD_NAME log_dataset_1d`

7.13.1.14 `#define IXD_NAME power_dataset_1d`

7.13.1.15 `#define IXD_NAME divide_dataset_1d`

7.13.1.16 `#define IXD_NAME times_dataset_1d`

7.13.1.17 `#define IXD_NAME minus_dataset_1d`

7.13.1.18 `#define IXD_NAME plus_dataset_1d`

7.13.1.19 `#define IXD_OPERATION Divide`

7.13.1.20 `#define IXD_OPERATION Times`

7.13.1.21 `#define IXD_OPERATION Minus`

7.13.1.22 `#define IXD_OPERATION Plus`

7.13.1.23 `#define IXD_OPERATION Tanh`

7.13.1.24 `#define IXD_OPERATION Cosh`

7.13.1.25 `#define IXD_OPERATION Sinh`

7.13.1.26 `#define IXD_OPERATION Tan`

7.13.1.27 `#define IXD_OPERATION Cos`

---

Generated on Mon Feb 19 18:32:25 2007 for LIBISIS by Doxygen

7.13.1.28 `#define IXD_OPERATION Sin`

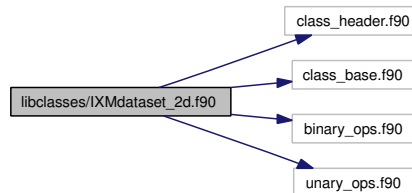
7.13.1.29 `#define IXD_OPERATION Exp`

7.13.1.30 `#define IXD_OPERATION Log`

## 7.14 libclasses/IXMdataset\_2d.f90 File Reference

```
#include "class_header.f90"
#include "class_base.f90"
#include "binary_ops.f90"
#include "unary_ops.f90"
```

Include dependency graph for IXMdataset\_2d.f90:



### Namespaces

- namespace `IXMdataset_2d`

### Classes

- struct `IXMdataset_2d::IXTdataset_2d`
- interface `IXMdataset_2d::IXFintegrate_x_dataset_2d`
- interface `IXMdataset_2d::IXFplus_dataset_2d`
- interface `IXMdataset_2d::IXFplus`
- interface `IXMdataset_2d::IXFminus_dataset_2d`
- interface `IXMdataset_2d::IXFminus`
- interface `IXMdataset_2d::IXFtimes_dataset_2d`
- interface `IXMdataset_2d::IXFtimes`
- interface `IXMdataset_2d::IXFdivide_dataset_2d`
- interface `IXMdataset_2d::IXFdivide`
- interface `IXMdataset_2d::IXFpower_dataset_2d`
- interface `IXMdataset_2d::IXFpower`
- interface `IXMdataset_2d::IXFplus_X_dataset_2d`
- interface `IXMdataset_2d::IXFplus_X`
- interface `IXMdataset_2d::IXFminus_X_dataset_2d`
- interface `IXMdataset_2d::IXFminus_X`
- interface `IXMdataset_2d::IXFtimes_X_dataset_2d`
- interface `IXMdataset_2d::IXFtimes_X`
- interface `IXMdataset_2d::IXFdivide_X_dataset_2d`
- interface `IXMdataset_2d::IXFdivide_X`
- interface `IXMdataset_2d::IXFplus_Y_dataset_2d`
- interface `IXMdataset_2d::IXFplus_Y`
- interface `IXMdataset_2d::IXFminus_Y_dataset_2d`
- interface `IXMdataset_2d::IXFminus_Y`
- interface `IXMdataset_2d::IXFtimes_Y_dataset_2d`
- interface `IXMdataset_2d::IXFtimes_Y`

- interface IXMdataset\_2d::IXFdivide\_Y\_dataset\_2d
- interface IXMdataset\_2d::IXFdivide\_Y
- interface IXMdataset\_2d::IXFexp
- interface IXMdataset\_2d::IXFlog
- interface IXMdataset\_2d::IXFsin
- interface IXMdataset\_2d::IXFcos
- interface IXMdataset\_2d::IXFtan
- interface IXMdataset\_2d::IXFsinh
- interface IXMdataset\_2d::IXFcosh
- interface IXMdataset\_2d::IXFtanh
- interface IXMdataset\_2d::IXFunits\_dataset\_2d
- interface IXMdataset\_2d::IXFunits
- interface IXMdataset\_2d::IXFunspike

## Defines

- #define IXD\_TYPE dataset\_2d
- #define IXD\_DESCRIPTION "IXTdataset\_2d class"
- #define IXD\_TYPE dataset\_2d
- #define IXD\_SQTYPE 'dataset\_2d'
- #define IXD\_NAME plus\_dataset\_2d
- #define IXD\_TYPE dataset\_2d
- #define IXD\_OPERATION Plus
- #define IXD\_NAME minus\_dataset\_2d
- #define IXD\_TYPE dataset\_2d
- #define IXD\_OPERATION Minus
- #define IXD\_NAME times\_dataset\_2d
- #define IXD\_TYPE dataset\_2d
- #define IXD\_OPERATION Times
- #define IXD\_NAME divide\_dataset\_2d
- #define IXD\_TYPE dataset\_2d
- #define IXD\_OPERATION Divide
- #define IXD\_NAME power\_dataset\_2d
- #define IXD\_TYPE dataset\_2d
- #define IXD\_OPERATION Power
- #define IXD\_NAME log\_dataset\_2d
- #define IXD\_TYPE dataset\_2d
- #define IXD\_OPERATION Log
- #define IXD\_NAME exp\_dataset\_2d
- #define IXD\_TYPE dataset\_2d
- #define IXD\_OPERATION Exp
- #define IXD\_NAME sin\_dataset\_2d
- #define IXD\_TYPE dataset\_2d
- #define IXD\_OPERATION Sin
- #define IXD\_NAME cos\_dataset\_2d
- #define IXD\_TYPE dataset\_2d
- #define IXD\_OPERATION Cos
- #define IXD\_NAME tan\_dataset\_2d
- #define IXD\_TYPE dataset\_2d
- #define IXD\_OPERATION Tan

---

```

• #define IXD_NAME sinh_dataset_2d
• #define IXD_TYPE dataset_2d
• #define IXD_OPERATION Sinh
• #define IXD_NAME cosh_dataset_2d
• #define IXD_TYPE dataset_2d
• #define IXD_OPERATION Cosh
• #define IXD_NAME tanh_dataset_2d
• #define IXD_TYPE dataset_2d
• #define IXD_OPERATION Tanh
• #define IXD_DIM IXFarray_X_
• #define IXD_OPERATION Plus
• #define IXD_DIM IXFarray_X_
• #define IXD_OPERATION Minus
• #define IXD_DIM IXFarray_X_
• #define IXD_OPERATION Times
• #define IXD_DIM IXFarray_X_
• #define IXD_OPERATION Divide
• #define IXD_DIM IXFarray_Y_
• #define IXD_OPERATION Plus
• #define IXD_DIM IXFarray_Y_
• #define IXD_OPERATION Minus
• #define IXD_DIM IXFarray_Y_
• #define IXD_OPERATION Times
• #define IXD_DIM IXFarray_Y_
• #define IXD_OPERATION Divide
• #define IXD_DIMXY X_
• #define IXD_OPERATION Plus
• #define IXD_DIMXY X_
• #define IXD_OPERATION Minus
• #define IXD_DIMXY X_
• #define IXD_OPERATION Times
• #define IXD_DIMXY X_
• #define IXD_OPERATION Divide
• #define IXD_DIMXY Y_
• #define IXD_OPERATION Plus
• #define IXD_DIMXY Y_
• #define IXD_OPERATION Minus
• #define IXD_DIMXY Y_
• #define IXD_OPERATION Times
• #define IXD_DIMXY Y_
• #define IXD_OPERATION Divide
• #define IXD_OPERATION Plus
• #define IXD_OPERATION Minus
• #define IXD_OPERATION Times
• #define IXD_OPERATION Divide
• #define IXD_OPERATION Plus
• #define IXD_TYPE dataset_2d
• #define IXD_DIMS :,;
• #define IXD_OPERATION Minus
• #define IXD_TYPE dataset_2d

```

- `#define IXD_DIMS :,:`
- `#define IXD_OPERATION Times`
- `#define IXD_TYPE dataset_2d`
- `#define IXD_DIMS :,:`
- `#define IXD_OPERATION Divide`
- `#define IXD_TYPE dataset_2d`
- `#define IXD_DIMS :,:`

## Functions

- subroutine `IXMdataset_2d::IXFoperation_run_dataset_2d` (op, field, arg, status)
- subroutine `IXMdataset_2d::IXFget_ptr_dataset_2d` (w1, x, y, signal, error)
- subroutine `IXMdataset_2d::IXFget_alloc_dataset_2d` (w1, status, title, signal, error, s\_units, x, x\_units, x\_distribution, y, y\_units, y\_distribution, wout)
- subroutine `IXMdataset_2d::IXFget_dataset_2d` (dataset\_2d, status, title, signal, error, s\_units, x, x\_units, x\_distribution, y, y\_units, y\_distribution, wout)
- subroutine `IXMdataset_2d::IXFmake_dataset_2d` (dataset\_2d, nx, ny, xdist, xhist, ydist, yhist, status)
- subroutine `IXMdataset_2d::IXFcreate_dataset_2d` (dataset\_2d, title, signal, error, s\_units, x, x\_units, x\_distribution, y, y\_units, y\_distribution, status)
- subroutine `IXMdataset_2d::IXFcreatexyze_dataset_2d` (dataset\_2d, x, y, signal, error, status)
- subroutine `IXMdataset_2d::IXFset_dataset_2d` (dataset\_2d, status, title, signal, error, s\_units, x, x\_units, x\_distribution, y, y\_units, y\_distribution, ref)
- subroutine `IXMdataset_2d::IXFcheck_dataset_2d` (w1, status)
- subroutine `IXMdataset_2d::integrate_x_dataset_2d` (wres, w1, x1, x2, status)
- subroutine `IXMdataset_2d::integrate_x_arr_dataset_2d` (wres, d2d, x1, x2, status)
- subroutine `IXMdataset_2d::IXFintegrate_y_dataset_2d` (wres, w1, y1, y2, status)
- subroutine `IXMdataset_2d::IXFintegrate_xy_dataset_2d` (ires, w2D, xmin, xmax, ymin, ymax, status)
- subroutine `IXMdataset_2d::IXFintXsumY_dataset_2d` (ires, w2D, xmin, xmax, y\_lo, y\_hi, status)
- subroutine `IXMdataset_2d::IXFshift_dataset_2d` (wres, w1, status, shift\_x, shift\_y)
- subroutine `IXMdataset_2d::setup_binary_op_dataset_2d` (wres, w1, w2, status)
- subroutine `IXMdataset_2d::setup_unary_op_dataset_2d` (wres, w1, status)
- subroutine `IXMdataset_2d::finish_op_dataset_2d` (wres, w1, status)
- subroutine `IXMdataset_2d::IXFrebin_x_dataset_2d` (wres, status, w2, Xdesc, Xref)
- subroutine `IXMdataset_2d::IXFrebin_y_dataset_2d` (wres, status, w2, Ydesc, Yref)
- subroutine `IXMdataset_2d::IXFrebin_xy_dataset_2d` (wres, status, w2, Xdesc, Xref, Ydesc, Yref)
- subroutine `IXMdataset_2d::IXFrebunch_x_dataset_2d` (wres, w2, nbunch, status)

- subroutine IXMdataset\_2d::IXFrebunch\_y\_dataset\_2d (wres, w2, nbunch, status)
- subroutine IXMdataset\_2d::IXFrebunch\_xy\_dataset\_2d (wres, w2, Xbunch, Ybunch, status)
- subroutine IXMdataset\_2d::IXFregroup\_x\_dataset\_2d (wres, w2, param, status)
- subroutine IXMdataset\_2d::IXFregroup\_y\_dataset\_2d (wres, w2, param, status)
- subroutine IXMdataset\_2d::IXFregroup\_xy\_dataset\_2d (wres, w2, Xparam, Yparam, status)
- subroutine IXMdataset\_2d::IXFderiv1x\_dataset\_2d (wres, w1, status)
- subroutine IXMdataset\_2d::IXFderiv1y\_dataset\_2d (wres, w1, status)
- subroutine IXMdataset\_2d::IXFderiv2x\_dataset\_2d (wres, w1, status)
- subroutine IXMdataset\_2d::IXFderiv2y\_dataset\_2d (wres, w1, status)
- subroutine IXMdataset\_2d::IXFeffic\_dataset\_2d (d2d, atms, ki, status)
- subroutine IXMdataset\_2d::IXFdestroy\_dataset\_2d (w2d, status)
- subroutine IXMdataset\_2d::IXFexpand\_arrayd1d\_dataset\_2d (d2d, status, arrayd1d, list)
- subroutine IXMdataset\_2d::IXFexpand\_arrayd2d\_dataset\_2d (d2d, status, arrayd2d, list)
- subroutine IXMdataset\_2d::units\_single\_array (d2d, arrayd2d, status, emode, efixed, L1, L2, theta, delay, units\_out)
- subroutine IXMdataset\_2d::units\_array\_array (d2d\_in, d2d\_out, status, emode, efixed, L1, L2, theta, delay, units\_out)
- subroutine IXMdataset\_2d::units\_common (d2d\_in, i, d2d\_out, emode, efixed, L1, L2, theta, delay, units\_out, status)
- subroutine IXMdataset\_2d::units\_array (arrayd2d, status, emode, efixed, L1, L2, theta, delay, units\_out)
- subroutine IXMdataset\_2d::IXFcontract\_arrayd2d\_dataset\_2d (arrayd2d, d2d, status)
- subroutine IXMdataset\_2d::IXFgetei\_dataset\_2d (d2d, Ei, Lm1, Lm2, status)
- subroutine IXMdataset\_2d::IXFmoments\_dataset\_2d (d2d, index, Tmin, Tmax, T\_M, A\_M, status)
- subroutine IXMdataset\_2d::IXFunspike\_dataset\_2d (d2dout, d2d, status)
- subroutine IXMdataset\_2d::IXFmake\_label\_dataset\_2d (d2d, x\_label, s\_label, status)
- logical IXMdataset\_2d::x\_hist (w1d)
- logical IXMdataset\_2d::y\_hist (w1d)

### 7.14.1 Define Documentation

7.14.1.1 `#define IXD_DESCRIPTION "IXTdataset_2d class"`

7.14.1.2 `#define IXD_DIM IXFarray_Y_`

7.14.1.3 `#define IXD_DIM IXFarray_Y_`

7.14.1.4 `#define IXD_DIM IXFarray_Y_`

7.14.1.5 `#define IXD_DIM IXFarray_Y_`

7.14.1.6 `#define IXD_DIM IXFarray_X_`

7.14.1.7 `#define IXD_DIM IXFarray_X_`

7.14.1.8 `#define IXD_DIM IXFarray_X_`

7.14.1.9 `#define IXD_DIM IXFarray_X_`

7.14.1.10 `#define IXD_DIMS :,:`

7.14.1.11 `#define IXD_DIMS :,:`

7.14.1.12 `#define IXD_DIMS :,:`

7.14.1.13 `#define IXD_DIMS :,:`

7.14.1.14 `#define IXD_DIMXY Y_`

7.14.1.15 `#define IXD_DIMXY Y_`

7.14.1.16 `#define IXD_DIMXY Y_`

7.14.1.17 `#define IXD_DIMXY Y_`

7.14.1.18 `#define IXD_DIMXY X_`

7.14.1.19 `#define IXD_DIMXY X_`

7.14.1.20 `#define IXD_DIMXY X_`

7.14.1.21 `#define IXD_DIMXY X_`

7.14.1.22 `#define IXD_NAME tanh_dataset_2d`

7.14.1.23 `#define IXD_NAME cosh_dataset_2d`

7.14.1.24 `#define IXD_NAME sinh_dataset_2d`

7.14.1.25 `#define IXD_NAME tan_dataset_2d`

7.14.1.26 `#define IXD_NAME cos_dataset_2d`

7.14.1.27 `#define IXD_NAME sin_dataset_2d`

---

Generated on Mon Feb 19 18:32:25 2007 for LIBISIS by Doxygen

7.14.1.28 `#define IXD_NAME exp_dataset_2d`

7.14.1.29 `#define IXD_NAME log_dataset_2d`

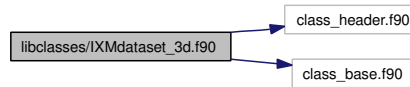
7.14.1.30 `#define IXD_NAME power_dataset_2d`

## 7.15 libclasses/IXMdataset\_3d.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMdataset\_3d.f90:



### Namespaces

- namespace `IXMdataset_3d`

### Classes

- struct `IXMdataset_3d::IXTdataset_3d`

### Defines

- `#define IXD_TYPE dataset_3d`
- `#define IXD_DESCRIPTION "IXTdataset_3d class"`
- `#define IXD_TYPE dataset_3d`
- `#define IXD_SQTYPE 'dataset_3d'`

### Functions

- subroutine `IXMdataset_3d::IXFoperation_run_dataset_3d` (op, field, arg, status)
- subroutine `IXMdataset_3d::IXFcheck_dataset_3d` (w1, status)
- subroutine `IXMdataset_3d::IXFdestroy_dataset_3d` (w3d, status)
- subroutine `IXMdataset_3d::IXFcreate_dataset_3d` (dataset\_3d, title, signal, error, s\_units, x, x\_units, x\_distribution, y, y\_units, y\_distribution, z, z\_units, z\_distribution, status)
- subroutine `IXMdataset_3d::IXFset_dataset_3d` (dataset\_3d, status, title, signal, error, s\_units, x, x\_units, x\_distribution, y, y\_units, y\_distribution, z, z\_units, z\_distribution, ref)
- subroutine `IXMdataset_3d::IXFget_dataset_3d` (w1, status)

#### 7.15.1 Define Documentation

7.15.1.1 `#define IXD_DESCRIPTION "IXTdataset_3d class"`

7.15.1.2 `#define IXD_SQTYPE 'dataset_3d'`

7.15.1.3 `#define IXD_TYPE dataset_3d`

7.15.1.4 `#define IXD_TYPE dataset_3d`

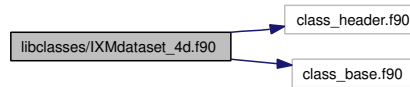


## 7.16 libclasses/IXMdataset\_4d.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMdataset\_4d.f90:



### Namespaces

- namespace `IXMdataset_4d`

### Classes

- struct `IXMdataset_4d::IXTdataset_4d`

### Defines

- `#define IXD_TYPE dataset_4d`
- `#define IXD_DESCRIPTION "IXTdataset_4d class"`
- `#define IXD_TYPE dataset_4d`
- `#define IXD_SQTYPE 'dataset_4d'`

### Functions

- subroutine `IXMdataset_4d::IXFoperation_run_dataset_4d` (op, field, arg, status)
- subroutine `IXMdataset_4d::IXFcheck_dataset_4d` (w1, status)
- subroutine `IXMdataset_4d::IXFdestroy_dataset_4d` (w3d, status)
- subroutine `IXMdataset_4d::IXFcreate_dataset_4d` (dataset\_4d, title, signal, error, s\_units, x1, x1\_units, x1\_distribution, x2, x2\_units, x2\_distribution, x3, x3\_units, x3\_distribution, x4, x4\_units, x4\_distribution, status)
- subroutine `IXMdataset_4d::IXFset_dataset_4d` (dataset\_4d, status, title, signal, error, s\_units, x1, x1\_units, x1\_distribution, x2, x2\_units, x2\_distribution, x3, x3\_units, x3\_distribution, x4, x4\_units, x4\_distribution, ref)
- subroutine `IXMdataset_4d::IXFget_dataset_4d` (w1, status)

#### 7.16.1 Define Documentation

7.16.1.1 `#define IXD_DESCRIPTION "IXTdataset_4d class"`

7.16.1.2 `#define IXD_SQTYPE 'dataset_4d'`

7.16.1.3 `#define IXD_TYPE dataset_4d`

7.16.1.4 `#define IXD_TYPE dataset_4d`

## 7.17 libclasses/IXMdataset\_common.f90 File Reference

### Namespaces

- namespace `IXMdataset_common`

## 7.18 libclasses/IXMdataset\_nd.f90 File Reference

### Namespaces

- namespace `IXMdataset_nd`

### Classes

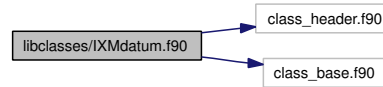
- struct `IXMdataset_nd::IXTdataset_nd`

## 7.19 libclasses/IXMdatum.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMdatum.f90:



### Namespaces

- namespace **IXMdatum**

### Classes

- struct **IXMdatum::IXTdatum**
- interface **IXMdatum::IXFplus\_Datum**
- interface **IXMdatum::IXFplus**
- interface **IXMdatum::IXFminus\_Datum**
- interface **IXMdatum::IXFminus**
- interface **IXMdatum::IXFtimes\_Datum**
- interface **IXMdatum::IXFtimes**
- interface **IXMdatum::IXFdivide\_Datum**
- interface **IXMdatum::IXFdivide**
- interface **IXMdatum::IXFpower\_Datum**
- interface **IXMdatum::IXFpower**
- interface **IXMdatum::IXFexp**
- interface **IXMdatum::IXFlog**
- interface **IXMdatum::IXFsin**
- interface **IXMdatum::IXFcos**
- interface **IXMdatum::IXFtan**
- interface **IXMdatum::IXFsinh**
- interface **IXMdatum::IXFcosh**
- interface **IXMdatum::IXFtanh**

### Defines

- **#define IXD\_TYPE datum**
- **#define IXD\_NO\_BASE 1**
- **#define IXD\_DESCRIPTION "IXTdatum class"**
- **#define IXD\_TYPE datum**
- **#define IXD\_SQTYPE 'datum'**

## Functions

- subroutine IXMdatum::IXFdestroy\_datum (arg, status)
- subroutine IXMdatum::IXFoperation\_run\_datum (op, field, arg, status)
- subroutine IXMdatum::IXFget\_datum (datum, status, value, error, wout)
- subroutine IXMdatum::IXFcreate\_datum (datum, value, error, status)
- subroutine IXMdatum::IXFset\_datum (datum, status, value, error, ref)
- subroutine IXMdatum::IXFcheck\_datum (w1, status)
- subroutine IXMdatum::IXFexp\_Datum (wres, w1, status)
- subroutine IXMdatum::IXFlog\_Datum (wres, w1, status)
- subroutine IXMdatum::IXFsin\_Datum (wres, w1, status)
- subroutine IXMdatum::IXFcos\_Datum (wres, w1, status)
- subroutine IXMdatum::IXFtan\_Datum (wres, w1, status)
- subroutine IXMdatum::IXFsinh\_Datum (wres, w1, status)
- subroutine IXMdatum::IXFcosh\_Datum (wres, w1, status)
- subroutine IXMdatum::IXFtanh\_Datum (wres, w1, status)

### 7.19.1 Define Documentation

7.19.1.1 `#define IXD_DESCRIPTION "IXTdatum class"`

7.19.1.2 `#define IXD_NO_BASE 1`

7.19.1.3 `#define IXD_SQTYPE 'datum'`

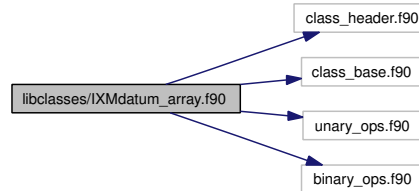
7.19.1.4 `#define IXD_TYPE datum`

7.19.1.5 `#define IXD_TYPE datum`

## 7.20 libclasses/IXMdatum\_array.f90 File Reference

```
#include "class_header.f90"
#include "class_base.f90"
#include "unary_ops.f90"
#include "binary_ops.f90"
```

Include dependency graph for IXMdatum\_array.f90:



### Namespaces

- namespace `IXMdatum_array`

### Classes

- struct `IXMdatum_array::IXTdatum_array`
- interface `IXMdatum_array::IXFplus_Datum_array`
- interface `IXMdatum_array::IXFplus`
- interface `IXMdatum_array::IXFminus_datum_array`
- interface `IXMdatum_array::IXFminus`
- interface `IXMdatum_array::IXFtimes_Datum_array`
- interface `IXMdatum_array::IXFtimes`
- interface `IXMdatum_array::IXFdivide_Datum_array`
- interface `IXMdatum_array::IXFdivide`
- interface `IXMdatum_array::IXFpower_Datum_array`
- interface `IXMdatum_array::IXFpower`
- interface `IXMdatum_array::IXFexp`
- interface `IXMdatum_array::IXFlog`
- interface `IXMdatum_array::IXFsin`
- interface `IXMdatum_array::IXFcos`
- interface `IXMdatum_array::IXFtan`
- interface `IXMdatum_array::IXFsinh`
- interface `IXMdatum_array::IXFcosh`
- interface `IXMdatum_array::IXFtanh`

### Defines

- `#define IXD_TYPE datum_array`
- `#define IXD_DESCRIPTION "IXTdatum_array class"`
- `#define IXD_TYPE datum_array`

- #define IXD\_SQTYPE 'datum\_array'
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Log\_Datum\_array
- #define IXD\_OPERATION Log
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Exp\_Datum\_array
- #define IXD\_OPERATION Exp
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Sin\_Datum\_array
- #define IXD\_OPERATION Sin
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Cos\_Datum\_array
- #define IXD\_OPERATION Cos
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Tan\_Datum\_array
- #define IXD\_OPERATION Tan
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Sinh\_Datum\_array
- #define IXD\_OPERATION Sinh
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Cosh\_Datum\_array
- #define IXD\_OPERATION Cosh
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Tanh\_Datum\_array
- #define IXD\_OPERATION Tanh
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Plus\_Datum\_array
- #define IXD\_OPERATION Plus
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Minus\_Datum\_array
- #define IXD\_OPERATION Minus
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Times\_Datum\_array
- #define IXD\_OPERATION Times
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Divide\_Datum\_array
- #define IXD\_OPERATION Divide
- #define IXD\_TYPE datum\_array
- #define IXD\_NAME Power\_Datum\_array
- #define IXD\_OPERATION Power

## Functions

- subroutine IXMdatum\_array::IXFdestroy\_datum\_array (arg, status)
- subroutine IXMdatum\_array::IXFoperation\_run\_datum\_array (op, field, arg, status)
- subroutine IXMdatum\_array::IXFcheck\_datum\_array (w1, status)
- subroutine IXMdatum\_array::IXFcreate\_datum\_array (array, signal, error, status)





## 7.20.1 Define Documentation

7.20.1.1 `#define IXD_DESCRIPTION "IXTdatum_array class"`

7.20.1.2 `#define IXD_NAME Power_Datum_array`

7.20.1.3 `#define IXD_NAME Divide_Datum_array`

7.20.1.4 `#define IXD_NAME Times_Datum_array`

7.20.1.5 `#define IXD_NAME Minus_Datum_array`

7.20.1.6 `#define IXD_NAME Plus_Datum_array`

7.20.1.7 `#define IXD_NAME Tanh_Datum_array`

7.20.1.8 `#define IXD_NAME Cosh_Datum_array`

7.20.1.9 `#define IXD_NAME Sinh_Datum_array`

7.20.1.10 `#define IXD_NAME Tan_Datum_array`

7.20.1.11 `#define IXD_NAME Cos_Datum_array`

7.20.1.12 `#define IXD_NAME Sin_Datum_array`

7.20.1.13 `#define IXD_NAME Exp_Datum_array`

7.20.1.14 `#define IXD_NAME Log_Datum_array`

7.20.1.15 `#define IXD_OPERATION Power`

7.20.1.16 `#define IXD_OPERATION Divide`

7.20.1.17 `#define IXD_OPERATION Times`

7.20.1.18 `#define IXD_OPERATION Minus`

7.20.1.19 `#define IXD_OPERATION Plus`

7.20.1.20 `#define IXD_OPERATION Tanh`

7.20.1.21 `#define IXD_OPERATION Cosh`

7.20.1.22 `#define IXD_OPERATION Sinh`

7.20.1.23 `#define IXD_OPERATION Tan`

7.20.1.24 `#define IXD_OPERATION Cos`

7.20.1.25 `#define IXD_OPERATION Sin`

7.20.1.26 `#define IXD_OPERATION Exp`

7.20.1.27 `#define IXD_OPERATION Log`

---

Generated on Mon Feb 19 18:32:25 2007 for LIBISIS by Doxygen

7.20.1.28 `#define IXD_SQTYPE 'datum_array'`

7.20.1.29 `#define IXD_TYPE datum_array`

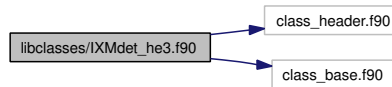
7.20.1.30 `#define IXD_TYPE datum_array`

## 7.21 libclasses/IXMdet\_he3.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMdet\_he3.f90:



### Namespaces

- namespace `IXMdet_he3`

### Classes

- struct `IXMdet_he3::IXTdet_he3`

### Defines

- `#define IXD_TYPE det_he3`
- `#define IXD_DESCRIPTION "IXTdet_he3 class"`
- `#define IXD_TYPE det_he3`
- `#define IXD_SQTYPE 'det_he3'`

### Functions

- subroutine `IXMdet_he3::IXFoperation_run_det_he3` (op, field, arg, status)
- subroutine `IXMdet_he3::IXFcheck_det_he3` (arg, status)
- subroutine `IXMdet_he3::IXFdestroy_det_he3` (det, status)
- subroutine `IXMdet_he3::IXFcreate_det_he3` (arg, checksum, gas\_pressure, wall\_thickness, status)
- subroutine `IXMdet_he3::IXFset_det_he3` (det\_he3, status, checksum, gas\_pressure, wall\_thickness, ref)
- subroutine `IXMdet_he3::IXFget_det_he3` (det\_he3, status, checksum, gas\_pressure, wall\_thickness, wout)

#### 7.21.1 Define Documentation

7.21.1.1 `#define IXD_DESCRIPTION "IXTdet_he3 class"`

7.21.1.2 `#define IXD_SQTYPE 'det_he3'`

7.21.1.3 `#define IXD_TYPE det_he3`

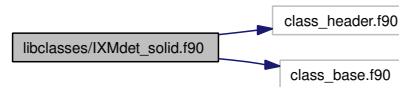
7.21.1.4 `#define IXD_TYPE det_he3`

## 7.22 libclasses/IXMdet\_\_solid.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMdet\_\_solid.f90:



### Namespaces

- namespace `IXMdet__solid`

### Classes

- struct `IXMdet__solid::IXTdet__solid`

### Defines

- `#define IXD__TYPE det__solid`
- `#define IXD__DESCRIPTION "IXTdet__solid class"`
- `#define IXD__TYPE det__solid`
- `#define IXD__SQTYPE 'det__solid'`

### Functions

- subroutine `IXMdet__solid::IXFoperation_run_det__solid` (op, field, arg, status)
- subroutine `IXMdet__solid::IXFcheck_det__solid` (arg, status)
- subroutine `IXMdet__solid::IXFdestroy_det__solid` (det, status)
- subroutine `IXMdet__solid::IXFcreate_det__solid` (arg, checksum, macro\_xs, status)
- subroutine `IXMdet__solid::IXFset_det__solid` (det\_\_solid, status, checksum, macro\_xs, ref)
- subroutine `IXMdet__solid::IXFget_det__solid` (det\_\_solid, status, checksum, macro\_xs, wout)

#### 7.22.1 Define Documentation

7.22.1.1 `#define IXD__DESCRIPTION "IXTdet__solid class"`

7.22.1.2 `#define IXD__SQTYPE 'det__solid'`

7.22.1.3 `#define IXD__TYPE det__solid`

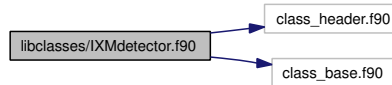
7.22.1.4 `#define IXD__TYPE det__solid`

## 7.23 libclasses/IXMdetector.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMdetector.f90:



### Namespaces

- namespace `IXMdetector`

### Classes

- struct `IXMdetector::IXTdetector`

### Defines

- `#define IXD_TYPE detector`
- `#define IXD_DESCRIPTION "IXTdetector class"`
- `#define IXD_TYPE detector`
- `#define IXD_SQTYPE 'detector'`

### Functions

- subroutine `IXMdetector::IXFoperation_run_detector` (`op`, `field`, `arg`, `status`)
- subroutine `IXMdetector::IXFcheck_detector` (`arg`, `status`)
- subroutine `IXMdetector::IXFdestroy_detector` (`detector`, `status`)
- subroutine `IXMdetector::IXFincfref_detector` (`detector`)
- subroutine `IXMdetector::IXFdecref_detector` (`detector`)
- subroutine `IXMdetector::IXFset_detector` (`detector`, `status`, `checksum`, `det_no`, `delay_time`, `dead_time`, `theta`, `L2`, `phi`, `group_index`, `det_type`, `det_he3`, `det_solid`, `type_index`, `ref`)
- subroutine `IXMdetector::IXFcreate_detector` (`detector`, `checksum`, `det_no`, `delay_time`, `dead_time`, `theta`, `L2`, `phi`, `group_index`, `det_type`, `det_he3`, `det_solid`, `type_index`, `status`)
- subroutine `IXMdetector::IXFget_detector` (`detector`, `status`, `checksum`, `det_no`, `delay_time`, `dead_time`, `theta`, `L2`, `phi`, `group_index`, `det_type`, `det_he3`, `det_solid`, `type_index`, `wout`)
- subroutine `IXMdetector::IXFget_alloc_detector` (`detector`, `status`, `checksum`, `det_no`, `delay_time`, `dead_time`, `theta`, `L2`, `phi`, `group_index`, `det_type`, `det_he3`, `det_solid`, `type_index`, `wout`)
- subroutine `IXMdetector::IXFget_ptr_detector` (`detector`, `checksum`, `det_no`, `delay_time`, `dead_time`, `theta`, `L2`, `phi`, `group_index`, `&det_type`, `type_index`)
- `real(dp)` `IXMdetector::IXFavgL2_detector` (`arg`, `list_in`)
- `real(dp)` `IXMdetector::IXFavgphi_detector` (`arg`, `list_in`)

- real(dp) IXMdetector::IXFavgtheta\_detector (arg, list\_in)
- real(dp) IXMdetector::IXFavgdelaytime\_detector (arg, list\_in)
- real(dp) IXMdetector::IXFavgdeadtime\_detector (arg, list\_in)
- real(dp) IXMdetector::IXFaverage\_detector (var\_array, list\_in)
- subroutine IXMdetector::IXFupdate\_detector (det, good, total, checksum, det\_no, delay\_time, dead\_time, theta, L2, phi, group\_index, det\_type, det\_he3, det\_solid, type\_index, status)
- subroutine IXMdetector::IXFalloc\_section\_detector (arg, status, list, checksum, det\_no, delay\_time, dead\_time, theta, L2, phi, group\_index, det\_type, type\_index)
- subroutine IXMdetector::IXFpopulate\_detector (detector, rawfile, index\_list, status)

### 7.23.1 Define Documentation

7.23.1.1 #define IXD\_DESCRIPTION "IXTdetector class"

7.23.1.2 #define IXD\_SQTYPE 'detector'

7.23.1.3 #define IXD\_TYPE detector

7.23.1.4 #define IXD\_TYPE detector

## 7.24 libclasses/IXMdiffraction\_instrument.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMdiffraction\_instrument.f90:



### Namespaces

- namespace **IXMdiffraction\_instrument**

### Classes

- struct **IXMdiffraction\_instrument::IXTdiffraction\_instrument**
- interface **IXMdiffraction\_instrument::IXFget\_ptr**
- interface **IXMdiffraction\_instrument::IXFget\_emode**

### Defines

- **#define IXD\_TYPE diffraction\_instrument**
- **#define IXD\_DESCRIPTION "IXTdiffraction\_instrument class"**
- **#define IXD\_TYPE diffraction\_instrument**
- **#define IXD\_SQTYPE 'diffraction\_instrument'**

### Functions

- subroutine **IXMdiffraction\_instrument::get\_ptr** (di\_ptr)
- subroutine **IXMdiffraction\_instrument::get\_emode** (d\_inst, status, emode, efixed)
- subroutine **IXMdiffraction\_instrument::IXFdestroy\_diffraction\_instrument** (arg, status)
- subroutine **IXMdiffraction\_instrument::IXFoperation\_run\_diffraction\_instrument** (op, field, arg, status)
- subroutine **IXMdiffraction\_instrument::IXFget\_diffraction\_instrument** (diffraction\_instrument, status, wout)
- subroutine **IXMdiffraction\_instrument::IXFcreate\_diffraction\_instrument** (diffraction\_instrument, status)
- subroutine **IXMdiffraction\_instrument::IXFset\_diffraction\_instrument** (diffraction\_instrument, status, ref)
- subroutine **IXMdiffraction\_instrument::IXFcheck\_diffraction\_instrument** (di, status)
- subroutine **IXMdiffraction\_instrument::IXFpopulate\_diffraction\_instrument** (di, dso, status)
- subroutine **IXMdiffraction\_instrument::IXFget\_ptr\_diffraction\_instrument** (diffraction\_instrument)

## Variables

- type(IXTdiffraction\_instrument), target, save IXMdiffraction\_instrument::diff\_inst

### 7.24.1 Define Documentation

7.24.1.1 `#define IXD_DESCRIPTION "IXTdiffraction_instrument class"`

7.24.1.2 `#define IXD_SQTYPE 'diffraction_instrument'`

7.24.1.3 `#define IXD_TYPE diffraction_instrument`

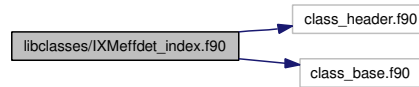
7.24.1.4 `#define IXD_TYPE diffraction_instrument`

## 7.25 libclasses/IXMeffdet\_index.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMeffdet\_index.f90:



### Namespaces

- namespace `IXMeffdet_index`

### Classes

- struct `IXMeffdet_index::IXTeffdet_index`

### Defines

- `#define IXD_TYPE effdet_index`
- `#define IXD_DESCRIPTION "IXTeffdet_index class"`
- `#define IXD_TYPE effdet_index`
- `#define IXD_SQTYPE 'effdet_index'`

### Functions

- subroutine `IXMeffdet_index::IXFoperation_run_effdet_index` (op, field, arg, status)
- subroutine `IXMeffdet_index::IXFcreate_effdet_index` (effdet\_index, good\_index, total\_index, status)
- subroutine `IXMeffdet_index::IXFcheck_effdet_index` (arg, status)
- subroutine `IXMeffdet_index::IXFdestroy_effdet_index` (effdet\_index, status)
- subroutine `IXMeffdet_index::IXFset_effdet_index` (effdet\_index, status, good\_index, total\_index, ref)
- subroutine `IXMeffdet_index::IXFget_effdet_index` (effdet\_index, status, good\_index, total\_index, wout)
- subroutine `IXMeffdet_index::IXFget_ptr_effdet_index` (effdet\_index, good\_index, total\_index)
- subroutine `IXMeffdet_index::IXFget_alloc_effdet_index` (effdet\_index, status, good\_index, total\_index, wout)
- subroutine `IXMeffdet_index::IXFpopulate_effdet_index` (effdet\_index, eff\_det, wsbrg\_ptr, spe\_ptr, det\_full, status)



## 7.25.1 Define Documentation

7.25.1.1 `#define IXD_DESCRIPTION "IXTeffdet_index class"`

7.25.1.2 `#define IXD_SQTYPE 'effdet_index'`

7.25.1.3 `#define IXD_TYPE effdet_index`

7.25.1.4 `#define IXD_TYPE effdet_index`

## 7.26 libclasses/IXMfermi\_chopper.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMfermi\_chopper.f90:



### Namespaces

- namespace IXMfermi\_chopper

### Classes

- struct IXMfermi\_chopper::IXTfermi\_chopper
- interface IXMfermi\_chopper::IXFtransmission\_fermi\_chopper
- interface IXMfermi\_chopper::IXFtransmission\_odd\_fermi\_chopper
- interface IXMfermi\_chopper::IXFvariance\_fermi\_chopper
- interface IXMfermi\_chopper::IXFvariance\_odd\_fermi\_chopper

### Defines

- #define IXD\_TYPE fermi\_chopper
- #define IXD\_DESCRIPTION "IXTfermi\_chopper class"
- #define IXD\_TYPE fermi\_chopper
- #define IXD\_SQTYPE 'fermi\_chopper'

### Functions

- subroutine IXMfermi\_chopper::IXFdestroy\_fermi\_chopper (arg, status)
- subroutine IXMfermi\_chopper::IXFoperation\_run\_fermi\_chopper (op, field, arg, status)
- subroutine IXMfermi\_chopper::IXFcreate\_Fermi\_chopper (fc, name, distance, frequency, period, radius, curvature, slit\_width,&slit\_spacing, blade\_width, width, height, energy, status)
- subroutine IXMfermi\_chopper::IXFset\_Fermi\_chopper (fc, status, name, distance, frequency, period, radius, curvature, slit\_width, slit\_spacing, blade\_width, width, height, energy, ref)
- subroutine IXMfermi\_chopper::IXFget\_Fermi\_chopper (fc, status, name, distance, frequency, period, radius, curvature, slit\_width,&slit\_spacing, blade\_width, width, height, energy, wout)
- subroutine IXMfermi\_chopper::IXFcheck\_Fermi\_chopper (fc, status)
- real(dp) IXMfermi\_chopper::IXFtransmission\_internal\_ei\_fermi\_chopper (c, status)
- real(dp) IXMfermi\_chopper::IXFtransmission\_scalar\_ei\_fermi\_chopper (c, energy, status)

- real(dp) IXMfermi\_chopper::IXFtransmission\_vector\_ei\_fermi\_chopper (c, energy, status)
- real(dp) IXMfermi\_chopper::IXFtransmission\_internal\_ei\_odd\_fermi\_chopper (c, status)
- real(dp) IXMfermi\_chopper::IXFtransmission\_scalar\_ei\_odd\_fermi\_chopper (c, energy, status)
- real(dp) IXMfermi\_chopper::IXFtransmission\_vector\_ei\_odd\_fermi\_chopper (c, energy, status)
- real(dp) IXMfermi\_chopper::IXFtransmission\_gen\_fermi\_chopper (c, sigma, energy, status)
- real(dp) IXMfermi\_chopper::IXFvariance\_internal\_ei\_fermi\_chopper (c, status)
- real(dp) IXMfermi\_chopper::IXFvariance\_scalar\_ei\_fermi\_chopper (c, energy, status)
- real(dp) IXMfermi\_chopper::IXFvariance\_vector\_ei\_fermi\_chopper (c, energy, status)
- real(dp) IXMfermi\_chopper::IXFvariance\_internal\_ei\_odd\_fermi\_chopper (c, status)
- real(dp) IXMfermi\_chopper::IXFvariance\_scalar\_ei\_odd\_fermi\_chopper (c, energy, status)
- real(dp) IXMfermi\_chopper::IXFvariance\_vector\_ei\_odd\_fermi\_chopper (c, energy, status)
- real(dp) IXMfermi\_chopper::IXFvariance\_gen\_fermi\_chopper (c, sigma, energy, status)

## 7.26.1 Define Documentation

7.26.1.1 `#define IXD_DESCRIPTION "IXTfermi_chopper class"`

7.26.1.2 `#define IXD_SQTYPE 'fermi_chopper'`

7.26.1.3 `#define IXD_TYPE fermi_chopper`

7.26.1.4 `#define IXD_TYPE fermi_chopper`

## 7.27 libclasses/IXMfileio.f90 File Reference

```
#include "fileio_routines.f90"
```

Include dependency graph for IXMfileio.f90:



### Namespaces

- namespace **IXMfileio**

### Classes

- struct **IXMfileio::IXTfileio**
- interface **IXMfileio::IXBfileWrite**
- interface **IXMfileio::IXBfileRead**
- interface **IXMfileio::IXBfileReadAlloc**
- interface **IXMfileio::IXBfileReadPtr**
- interface **IXMfileio::IXFfile\_read**
- interface **IXMfileio::IXFfile\_write**
- interface **IXMfileio::IXFfile\_type**

### Defines

- **#define IXD\_NAME i4b1**
- **#define IXD\_TYPE integer(i4b)**
- **#define IXD\_TYPE\_TEMP integer(i4b)**
- **#define IXD\_DIMS :**
- **#define IXD\_NAME i4b2**
- **#define IXD\_TYPE integer(i4b)**
- **#define IXD\_TYPE\_TEMP integer(i4b)**
- **#define IXD\_DIMS :,:**
- **#define IXD\_NAME i4b3**
- **#define IXD\_TYPE integer(i4b)**
- **#define IXD\_TYPE\_TEMP integer(i4b)**
- **#define IXD\_DIMS :,::**
- **#define IXD\_NAME i4b4**
- **#define IXD\_TYPE integer(i4b)**
- **#define IXD\_TYPE\_TEMP integer(i4b)**
- **#define IXD\_DIMS :,:,::**
- **#define IXD\_NAME dp1**
- **#define IXD\_TYPE real(dp)**
- **#define IXD\_TYPE\_TEMP real(dp)**
- **#define IXD\_DIMS :**
- **#define IXD\_NAME dp2**
- **#define IXD\_TYPE real(dp)**
- **#define IXD\_TYPE\_TEMP real(dp)**

- `#define IXD_DIMS :,:`
- `#define IXD_NAME dp3`
- `#define IXD_TYPE real(dp)`
- `#define IXD_TYPE_TEMP real(dp)`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME dp4`
- `#define IXD_TYPE real(dp)`
- `#define IXD_TYPE_TEMP real(dp)`
- `#define IXD_DIMS :,,:,::`
- `#define IXD_NAME c1`
- `#define IXD_TYPE character(len=*)`
- `#define IXD_TYPE_TEMP character(len=len(value))`
- `#define IXD_DIMS :`

## Functions

- subroutine `IXMfileio::nexus_error` (nx\_stat, message, status)
- logical `IXMfileio::IXFfile_check_type` (file\_name, ftype)
- integer(i4b) `IXMfileio::IXFfile_get_type` (file\_name)
- subroutine `IXMfileio::IXFfile_open` (fio, file\_name, mode, status)
- subroutine `IXMfileio::IXFfile_close` (fio, status)
- subroutine `IXMfileio::IXBfileMakeGroup` (fio, name, class)
- subroutine `IXMfileio::IXBfileOpenGroup` (fio, name, class)
- subroutine `IXMfileio::IXBfileCloseGroup` (fio, name)
- subroutine `IXMfileio::IXBfileWriteChar` (fio, name, value, status)
- subroutine `IXMfileio::IXBfileReadChar` (fio, name, value, status)
- subroutine `IXMfileio::IXBfileWriteInteger` (fio, name, value, status)
- subroutine `IXMfileio::IXBfileReadInteger` (fio, name, value, status)
- subroutine `IXMfileio::IXBfileWriteReal` (fio, name, value, status)
- subroutine `IXMfileio::IXBfileReadReal` (fio, name, value, status)
- subroutine `IXMfileio::IXBfileWriteLogical` (fio, name, value, status)
- subroutine `IXMfileio::IXBfileReadLogical` (fio, name, value, status)
- subroutine `IXMfileio::IXFfile_read_fileio` (fio, value, name, status)
- subroutine `IXMfileio::IXFfile_write_fileio` (fio, value, name, status)
- subroutine `IXMfileio::IXBfindGroup` (fio, group\_name, group\_class, found, status)

## Variables

- integer, parameter `IXMfileio::IXC_READ = 1`
- integer, parameter `IXMfileio::IXC_WRITE = 2`
- integer, parameter `IXMfileio::IXC_RDWR = IXC_READ+IXC_WRITE`
- integer, parameter `IXMfileio::IXC_CREATE = 4`
- integer, parameter `IXMfileio::IXC_CREATEXML = 8`
- integer, parameter `IXMfileio::IXCfile_type_ascii = 1`
- integer, parameter `IXMfileio::IXCfile_type_binary = 2`

## 7.27.1 Define Documentation

7.27.1.1 #define IXD\_DIMS :

7.27.1.2 #define IXD\_DIMS ::,,::

7.27.1.3 #define IXD\_DIMS ::,,::

7.27.1.4 #define IXD\_DIMS ::,:

7.27.1.5 #define IXD\_DIMS :

7.27.1.6 #define IXD\_DIMS ::,,::

7.27.1.7 #define IXD\_DIMS ::,,::

7.27.1.8 #define IXD\_DIMS ::,:

7.27.1.9 #define IXD\_DIMS :

7.27.1.10 #define IXD\_NAME c1

7.27.1.11 #define IXD\_NAME dp4

7.27.1.12 #define IXD\_NAME dp3

7.27.1.13 #define IXD\_NAME dp2

7.27.1.14 #define IXD\_NAME dp1

7.27.1.15 #define IXD\_NAME i4b4

7.27.1.16 #define IXD\_NAME i4b3

7.27.1.17 #define IXD\_NAME i4b2

7.27.1.18 #define IXD\_NAME i4b1

7.27.1.19 #define IXD\_TYPE character(len=\*)

7.27.1.20 #define IXD\_TYPE real(dp)

7.27.1.21 #define IXD\_TYPE real(dp)

7.27.1.22 #define IXD\_TYPE real(dp)

7.27.1.23 #define IXD\_TYPE real(dp)

7.27.1.24 #define IXD\_TYPE integer(i4b)

7.27.1.25 #define IXD\_TYPE integer(i4b)

7.27.1.26 #define IXD\_TYPE integer(i4b)

7.27.1.27 #define IXD\_TYPE integer(i4b)

7.27.1.28 #define IXD\_TYPE\_TEMP character(len=len(value))

7.27.1.29 #define IXD\_TYPE\_TEMP real(dp)

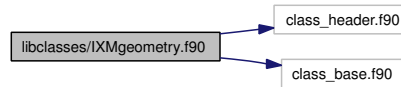
7.27.1.30 #define IXD\_TYPE\_TEMP real(dp)

## 7.28 libclasses/IXMgeometry.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMgeometry.f90:



### Namespaces

- namespace **IXMgeometry**

### Classes

- struct **IXMgeometry::IXTgeometry**
- interface **IXMgeometry::IXFvolume**
- interface **IXMgeometry::IXFsolid\_angle**

### Defines

- `#define IXD_TYPE geometry`
- `#define IXD_NO_BASE 1`
- `#define IXD_DESCRIPTION "IXTgeometry class"`
- `#define IXD_TYPE geometry`
- `#define IXD_SQTYPE 'geometry'`

### Functions

- subroutine **IXMgeometry::IXFdestroy\_geometry** (arg, status)
- subroutine **IXMgeometry::IXFcreate\_geometry** (geometry, translation, orientation, shape, status)
- subroutine **IXMgeometry::IXFoperation\_run\_geometry** (op, field, arg, status)
- subroutine **IXMgeometry::IXFset\_geometry** (geometry, status, translation, orientation, shape, ref)
- subroutine **IXMgeometry::IXFget\_geometry** (geometry, status, translation, orientation, shape, wout)
- subroutine **IXMgeometry::IXFcreate\_class\_geometry** (self, geometry)
- subroutine **IXMgeometry::IXFcreate\_attributes\_geometry** (self, status, translation, orientation, shape)
- subroutine **IXMgeometry::IXFcheck\_geometry** (geometry, status)
- `real(dp) IXMgeometry::IXFvolume_geometry` (geometry)
- `real(dp) IXMgeometry::IXFsolid_angle_geometry` (geometry, vp)
- `real(dp), dimension(:,:), pointer IXMgeometry::IXFarea_vertices_geometry` (geometry, or, t)
- subroutine **IXMgeometry::IXFprojarea\_vertices\_geometry** (geometry, or, t, projection, px, py, status, radius, axes)

## 7.28.1 Define Documentation

7.28.1.1 `#define IXD_DESCRIPTION "IXTgeometry class"`

7.28.1.2 `#define IXD_NO_BASE 1`

7.28.1.3 `#define IXD_SQTYPE 'geometry'`

7.28.1.4 `#define IXD_TYPE geometry`

7.28.1.5 `#define IXD_TYPE geometry`

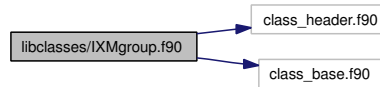


## 7.29 libclasses/IXMgroup.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMgroup.f90:



### Namespaces

- namespace `IXMgroup`

### Classes

- struct `IXMgroup::IXTgroup`

### Defines

- `#define IXD_TYPE group`
- `#define IXD_DESCRIPTION "IXTgroup class"`
- `#define IXD_TYPE group`
- `#define IXD_SQTYPE 'group'`

### Functions

- subroutine `IXMgroup::IXFoperation_run_group (op, field, arg, status)`
- subroutine `IXMgroup::IXFset_group (opt, status, name, ref)`
- subroutine `IXMgroup::IXFget_group (opt, status, name, wout)`
- subroutine `IXMgroup::IXFcheck_group (opt, status)`
- subroutine `IXMgroup::IXFdestroy_group (opt, status)`
- subroutine `IXMgroup::IXFcreate_group (opt, name, status)`

### Variables

- integer, parameter `IXMgroup::IXCinvalid_id_group = -1`
- integer, parameter `IXMgroup::IXCno_parent_group = 0`

## 7.29.1 Define Documentation

7.29.1.1 `#define IXD_DESCRIPTION "IXTgroup class"`

7.29.1.2 `#define IXD_SQTYPE 'group'`

7.29.1.3 `#define IXD_TYPE group`

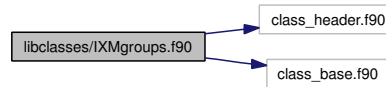
7.29.1.4 `#define IXD_TYPE group`

## 7.30 libclasses/IXMgroups.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMgroups.f90:



### Namespaces

- namespace **IXMgroups**

### Classes

- struct **IXMgroups::IXTgroups**
- interface **IXMgroups::IXFparent\_id\_groups**
- interface **IXMgroups::IXFparent\_groups**
- interface **IXMgroups::IXFis\_member\_groups**
- interface **IXMgroups::IXFremove\_groups**
- interface **IXMgroups::IXFparent\_list\_groups**
- interface **IXMgroups::IXFmember\_list\_groups**

### Defines

- `#define IXD_TYPE groups`
- `#define IXD_DESCRIPTION "IXTgroups class"`
- `#define IXD_TYPE groups`
- `#define IXD_SQTYPE 'groups'`

### Functions

- subroutine **IXMgroups::IXFoperation\_run\_groups** (op, field, arg, status)
- subroutine **IXMgroups::IXFset\_groups** (opt, status, names, ref)
- subroutine **IXMgroups::IXFget\_groups** (opt, status, names, wout)
- subroutine **IXMgroups::IXFcheck\_groups** (opt, status)
- subroutine **IXMgroups::IXFdestroy\_groups** (opt, status)
- subroutine **IXMgroups::IXFcreate\_groups** (opt, names, status)
- subroutine **IXMgroups::IXFadd\_groups** (groups, name, parent, status)
- character(len=long\_len) **IXMgroups::IXFname\_groups** (groups, id)
- subroutine **IXMgroups::parent\_list\_byid** (groups, id, id\_list, n, status)
- subroutine **IXMgroups::parent\_list\_byname** (groups, name, id\_list, n, status)
- subroutine **IXMgroups::member\_list\_byid** (groups, id, id\_list, n, status)
- subroutine **IXMgroups::member\_list\_byname** (groups, name, id\_list, n, status)
- subroutine **IXMgroups::remove\_byid** (groups, id, status)
- subroutine **IXMgroups::remove\_byname** (groups, name, status)

- subroutine IXMgroups::IXFprint\_groups (groups, id\_list, n, status)
- integer IXMgroups::index\_byname (groups, name)
- integer IXMgroups::index\_byid (groups, id)
- integer IXMgroups::IXFid\_groups (groups, name)
- integer IXMgroups::parent\_id\_byname (groups, name)
- integer IXMgroups::parent\_id\_byid (groups, id)
- character(len=long\_len) IXMgroups::parent\_byname (groups, name)
- character(len=long\_len) IXMgroups::parent\_byid (groups, id)
- logical IXMgroups::member\_byid (groups, this\_id, test\_id)
- logical IXMgroups::member\_byname (groups, this\_name, test\_name)

### 7.30.1 Define Documentation

7.30.1.1 #define IXD\_DESCRIPTION "IXTgroups class"

7.30.1.2 #define IXD\_SQTYPE 'groups'

7.30.1.3 #define IXD\_TYPE groups

7.30.1.4 #define IXD\_TYPE groups

## 7.31 libclasses/IXMhistory.f90 File Reference

### Namespaces

- namespace **IXMhistory**

### Classes

- struct **IXMhistory::IXThistory**
- interface **IXMhistory::IXFfile\_read**
- interface **IXMhistory::IXFfile\_write**
- interface **IXMhistory::IXFcheck**

### Functions

- subroutine **IXMhistory::IXFcheck\_history** (arg, status)
- subroutine **IXMhistory::IXFcheck\_array\_history** (w1, s)
- subroutine **IXMhistory::IXFfile\_read\_history** (value, fio, name, status)
- subroutine **IXMhistory::IXFfile\_write\_history** (value, fio, name, status)
- subroutine **IXMhistory::IXFcreate\_history** (history, entry, status)
- subroutine **IXMhistory::IXFdestroy\_history** (history, status)
- subroutine **IXMhistory::IXFset\_history** (history, status, entry, ref)
- subroutine **IXMhistory::IXFget\_history** (history, status, entry, wout)
- subroutine **IXMhistory::IXFget\_ptr\_history** (history, entry)
- subroutine **IXMhistory::IXFadditem\_history** (hist, entry, status)

### Variables

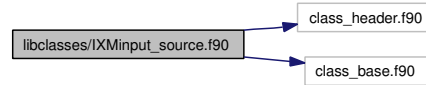
- integer(i4b), parameter **IXMhistory::IXChist\_initlength** = 5

## 7.32 libclasses/IXMinput\_source.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMinput\_source.f90:



### Namespaces

- namespace `IXMinput_source`

### Classes

- struct `IXMinput_source::IXTinput_source`
- interface `IXMinput_source::IXFsize`

### Defines

- `#define IXD_TYPE input_source`
- `#define IXD_DESCRIPTION "IXTinput_source class"`
- `#define IXD_TYPE input_source`
- `#define IXD_SQTYPE 'input_source'`

### Functions

- subroutine `IXMinput_source::IXFoperation_run_input_source (op, field, arg, status)`
- subroutine `IXMinput_source::IXFset_input_source (opt, status, ref)`
- subroutine `IXMinput_source::IXFget_input_source (opt, status, wout)`
- subroutine `IXMinput_source::IXFcheck_input_source (opt, status)`
- subroutine `IXMinput_source::IXFdestroy_input_source (opt, status)`
- subroutine `IXMinput_source::IXFcreate_input_source (opt, status)`
- subroutine `IXMinput_source::size_i_array (handle, item_name, item_size, status)`
- subroutine `IXMinput_source::size_i (handle, item_name, item_size, status)`

### Variables

- integer, parameter `IXMinput_source::IXCtype_unknown = 0`
- integer, parameter `IXMinput_source::IXCtype_isisraw = 1`
- integer, parameter `IXMinput_source::IXCtype_nexus = 2`

### 7.32.1 Define Documentation

7.32.1.1 `#define IXD_DESCRIPTION "IXTinput_source class"`

7.32.1.2 `#define IXD_SQTYPE 'input_source'`

7.32.1.3 `#define IXD_TYPE input_source`

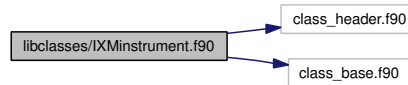
7.32.1.4 `#define IXD_TYPE input_source`

## 7.33 libclasses/IXMinstrument.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMinstrument.f90:



### Namespaces

- namespace **IXMinstrument**

### Classes

- struct **IXMinstrument::IXTinstrument**

### Defines

- `#define IXD_TYPE instrument`
- `#define IXD_DESCRIPTION "IXTinstrument class"`
- `#define IXD_TYPE instrument`
- `#define IXD_SQTYPE 'instrument'`

### Functions

- subroutine **IXMinstrument::IXFoperation\_run\_instrument** (op, field, arg, status)
- subroutine **IXMinstrument::IXFcheck\_instrument** (inst, status)
- subroutine **IXMinstrument::IXFdestroy\_instrument** (inst, status)
- subroutine **IXMinstrument::IXFcreate\_instrument** (inst, name, source, moderator, apertures, attenuators, spectra, status)
- subroutine **IXMinstrument::IXFset\_instrument** (inst, status, name, source, moderator, apertures, attenuators, spectra, detector, ref)
- subroutine **IXMinstrument::IXFget\_instrument** (inst, status, inst\_type, name, source, moderator, apertures, attenuators, spectra, detector, wout)
- subroutine **IXMinstrument::IXFget\_ptr\_instrument** (inst, ci, spectra, detector)
- subroutine **IXMinstrument::IXFunitsinfo\_instrument** (inst, status, emode, L1, efixd)
- subroutine **IXMinstrument::IXFei\_info\_instrument** (inst, L1, status)
- logical **IXMinstrument::IXFcompare\_instrument** (inst1, inst2)
- logical **IXMinstrument::IXFwhitecompare\_instrument** (sample, whitebeam)
- subroutine **IXMinstrument::IXFpopulate\_instrument** (inst, inputsource, dso, status, det\_map, mon\_map)
- subroutine **IXMinstrument::findusedspectra** (inst, tot\_used, status, det\_map, mon\_map)
- subroutine **IXMinstrument::finduseddetectors** (inst, tot\_used, status, det\_map, mon\_map)



### 7.33.1 Define Documentation

7.33.1.1 `#define IXD_DESCRIPTION "IXTinstrument class"`

7.33.1.2 `#define IXD_SQTYPE 'instrument'`

7.33.1.3 `#define IXD_TYPE instrument`

7.33.1.4 `#define IXD_TYPE instrument`

## 7.34 libclasses/IXMisis\_raw\_file.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMisis\_raw\_file.f90:



### Namespaces

- namespace IXMisis\_raw\_file
- namespace NE

### Classes

- interface IXMisis\_raw\_file::IXFget\_raw
- interface IXMisis\_raw\_file::IXFsize\_raw
- struct IXMisis\_raw\_file::IXTisis\_raw\_file

### Defines

- #define IXD\_TYPE isis\_raw\_file
- #define IXD\_NO\_BASE 1
- #define IXD\_DESCRIPTION "IXTisis\_raw\_file class"
- #define IXD\_TYPE isis\_raw\_file
- #define IXD\_SQTYPE 'isis\_raw\_file'

### Functions

- subroutine IXMisis\_raw\_file::IXFdestroy\_isis\_raw\_file (arg, status)
- subroutine IXMisis\_raw\_file::IXFcheck\_ISIS\_Raw\_File (arg, status)
- subroutine IXMisis\_raw\_file::IXFcreate\_ISIS\_Raw\_File (arg, status)
- subroutine IXMisis\_raw\_file::IXFset\_ISIS\_Raw\_File (arg, status, ref)
- subroutine IXMisis\_raw\_file::IXFget\_ISIS\_Raw\_File (arg, status, runid, found, ntc1, nsp1, ndet, nper, nmon, nuse)
- subroutine IXMisis\_raw\_file::IXFoperation\_run\_ISIS\_Raw\_File (op, field, arg, status)
- subroutine IXMisis\_raw\_file::IXFopen\_raw (file\_name, handle, status)
- subroutine IXMisis\_raw\_file::IXFopen\_raw\_handle (handle, status)
- subroutine IXMisis\_raw\_file::IXFsize\_raw\_i\_array (handle, item\_name, item\_size, status)
- subroutine IXMisis\_raw\_file::IXFsize\_raw\_i (handle, item\_name, item\_size, status)
- subroutine IXMisis\_raw\_file::IXFget\_spectrum\_d2 (handle, ispec, d2, period, status)

- subroutine IXMisis\_raw\_file::IXFget\_spectrum\_array\_d2 (handle, ispec, d2, periods, status)
- subroutine IXMisis\_raw\_file::IXFget\_spectrum\_array\_d1 (handle, ispec, d1, period, status)
- subroutine IXMisis\_raw\_file::IXFget\_spectrum\_d1 (handle, ispec, d1, period, status)
- subroutine IXMisis\_raw\_file::IXFget\_dp (handle, name, value, status)
- subroutine IXMisis\_raw\_file::IXFget\_dp1 (handle, name, value, status)
- subroutine IXMisis\_raw\_file::IXFget\_dp2 (handle, name, value, status)
- subroutine IXMisis\_raw\_file::IXFget\_char (handle, name, value, status)
- subroutine IXMisis\_raw\_file::IXFget\_real (handle, name, value, status)
- subroutine IXMisis\_raw\_file::IXFget\_real1 (handle, name, value, status)
- subroutine IXMisis\_raw\_file::IXFget\_real2 (handle, name, value, status)
- subroutine IXMisis\_raw\_file::IXFget\_int (handle, name, value, status)
- subroutine IXMisis\_raw\_file::IXFget\_int1 (handle, name, value, status)
- subroutine IXMisis\_raw\_file::IXFget\_int2 (handle, name, value, status)
- subroutine IXMisis\_raw\_file::IXFget\_data\_i1 (handle, spec\_no, value, status)
- subroutine IXMisis\_raw\_file::IXFget\_data\_i2 (handle, spec\_no, value, status)
- subroutine CLOSE\_DATA\_FILE ()
- subroutine GET\_CRPT\_SPECIALS (NTC, NSPEC, NPERIOD)
- subroutine UPDATE\_CRPT\_SPECIALS
- subroutine GETDAT (RUNID, IFSN, NOS, IDATA, LENGTH, ERRCODE)
- subroutine GETPARC (RUNID, NAME, CVALUE, LENGTH\_IN, LENGTH\_OUT, ERRCODE)
- subroutine GETPARI (RUNID, NAME, IVALUE, LENGTH\_IN, LENGTH\_OUT, ERRCODE)
- subroutine GETRUN (RUNID, IARRAY, LENGTH, IERROR)
- subroutine OPEN\_DATA\_FILE (RUNID, NTC, NDET, NUSE, ERRCODE)
- subroutine OPEN\_FILE (RUNID, FOUND)
- subroutine READ\_DATA (RUNID, ERRCODE, ISPEC, DELT\_WORK, SPEC\_WORK, TTHE\_WORK, L2\_WORK, NDETMAX, TCB, IDAT, NTCMAX, L1, L2, TTHE, DELT, PHI, RUN\_TITLE, DURATION, COMBINED\_TIME, USER\_NAME, INST\_NAME, RUN\_NO, USER\_TABLES, NUSE, QUICK)
- INTEGER TRUELEN (STRING)
- subroutine DEFAULT\_FILE\_NAME (IUNIT, FILE)
- subroutine FORT\_FILE (IUNIT, WORK)
- subroutine BYTE\_REL\_EXPAN (INDATA, NIN, NFROM, OUTDATA, NOUT, ISTATUS)
- subroutine GETPARR (RUNID, NAME, RVALUE, LENGTH\_IN, LENGTH\_OUT, ERRCODE)
- LOGICAL DAE\_ACCESS (NAME)
- LOGICAL CRPT\_ACCESS (NAME)
- subroutine GETSECT (ISTART, ILONG, IVALUE, IUNIT, IERR)
- INTEGER FASTGET\_INIT (A, IUNIT)
- subroutine FASTREAD\_DATA (RUNID, ERRCODE, ISPEC, DELT\_WORK, SPEC\_WORK, TTHE\_WORK, L2\_WORK, PHI\_WORK, USER\_WORK, NDETMAX, TCB, IDAT, NTCMAX, L1, L2, TTHE, DELT, PHI, RUN\_TITLE, DURATION, COMBINED\_TIME, USER\_NAME, INST\_NAME, RUN\_NO, USER\_TABLES, NUSE, QUICK)
- subroutine FERROR\_ADD (source, message, solution)

## Variables

- type(IXTstatus), pointer IXMisis\_raw\_file::global\_raw\_status = > NULL()

### 7.34.1 Define Documentation

7.34.1.1 #define IXD\_DESCRIPTION "IXTisis\_raw\_file class"

7.34.1.2 #define IXD\_NO\_BASE 1

7.34.1.3 #define IXD\_SQTYPE 'isis\_raw\_file'

7.34.1.4 #define IXD\_TYPE isis\_raw\_file

7.34.1.5 #define IXD\_TYPE isis\_raw\_file

### 7.34.2 Function Documentation

7.34.2.1 subroutine BYTE\_REL\_EXPN (INTEGER\*1,dimension(nin) *INDATA*,  
INTEGER *NIN*, INTEGER *NFROM*, INTEGER,dimension(nout)  
*OUTDATA*, INTEGER *NOU*T, INTEGER *ISTATUS*)

Definition at line 2048 of file IXMisis\_raw\_file.f90.

7.34.2.2 subroutine CLOSE\_DATA\_FILE ()

Definition at line 590 of file IXMisis\_raw\_file.f90.

7.34.2.3 LOGICAL CRPT\_ACCESS (CHARACTER\*(\*) *NAME*)

Definition at line 2460 of file IXMisis\_raw\_file.f90.

References TRUELEN().

Referenced by GETDAT(), GETPARR(), OPEN\_FILE(), and UPDATE\_CRPT\_SPECIALS().

Here is the call graph for this function:



7.34.2.4 LOGICAL DAE\_ACCESS (CHARACTER\*(\*) *NAME*)

Definition at line 2444 of file IXMisis\_raw\_file.f90.

References TRUELEN().

Referenced by GETDAT(), GETPARR(), OPEN\_FILE(), and UPDATE\_CRPT\_SPECIALS().

Here is the call graph for this function:



### 7.34.2.5 subroutine `DEFAULT_FILE_NAME` (INTEGER\*4 *IUNIT*, CHARACTER\*(\*) *FILE*)

Definition at line 2019 of file IXMisis\_raw\_file.f90.

### 7.34.2.6 INTEGER `FASTGET_INIT` (INTEGER *A*, INTEGER *IUNIT*)

Definition at line 2543 of file IXMisis\_raw\_file.f90.

References `TRUELEN()`.

Referenced by `OPEN_FILE()`.

Here is the call graph for this function:

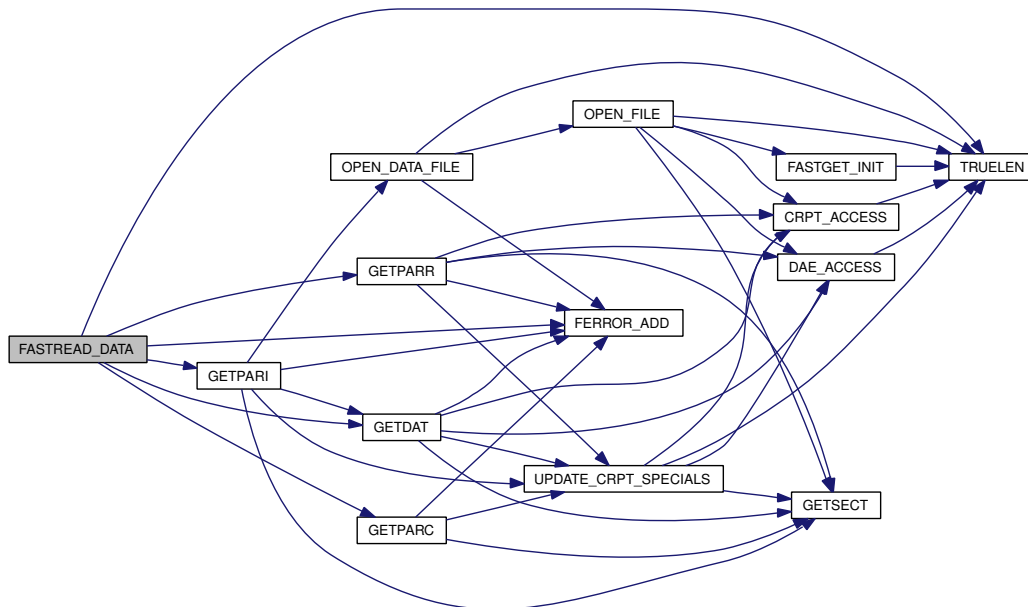


### 7.34.2.7 subroutine `FASTREAD_DATA` (CHARACTER\*(\*) *RUNID*, INTEGER\*4 *ERRCODE*, INTEGER\*4 *ISPEC*, REAL\*4,dimension(ndetmax) *DELT\_WORK*, INTEGER\*4,dimension(ndetmax) *SPEC\_WORK*, REAL\*4,dimension(ndetmax) *TTHE\_WORK*, REAL\*4,dimension(ndetmax) *L2\_WORK*, PHI\_WORK, REAL\*4,dimension(ndetmax,nuse) *USER\_WORK*, INTEGER\*4 *NDETMAX*, REAL\*4,dimension(ntcmax) *TCB*, INTEGER\*4,dimension(ntcmax) *IDAT*, INTEGER\*4 *NTCMAX*, REAL\*4 *L1*, REAL\*4 *L2*, REAL\*4 *TTHE*, REAL\*4 *DELT*, REAL\*4 *PHI*, CHARACTER\*80 *RUN\_TITLE*, REAL\*4 *DURATION*, CHARACTER\*21 *COMBINED\_TIME*, CHARACTER\*20 *USER\_NAME*, CHARACTER\*8 *INST\_NAME*, CHARACTER\*5 *RUN\_NO*, REAL\*4,dimension(nuse) *USER\_TABLES*, INTEGER\*4 *NUSE*, INTEGER\*4 *QUICK*)

Definition at line 2588 of file IXMisis\_raw\_file.f90.

References `FERROR_ADD()`, `GETDAT()`, `GETPARC()`, `GETPARI()`, `GETPARR()`, and `TRUELEN()`.

Here is the call graph for this function:



**7.34.2.8 subroutine FERROR\_ADD** (*character(len=\*) source, character(len=\*) message, character(len=\*) solution*)

Definition at line 2820 of file IXMisis\_raw\_file.f90.

References IXMisis\_raw\_file::global\_raw\_status, and IXMstatus::IXCseverity\_fatal.

Referenced by FASTREAD\_DATA(), GETDAT(), GETPARC(), GETPARI(), GETPARR(), OPEN\_DATA\_FILE(), and READ\_DATA().

**7.34.2.9 subroutine FORT\_FILE** (*INTEGER IUNIT, INTEGER\*1, dimension(120) WORK*)

Definition at line 2032 of file IXMisis\_raw\_file.f90.

References TRUELEN().

Here is the call graph for this function:

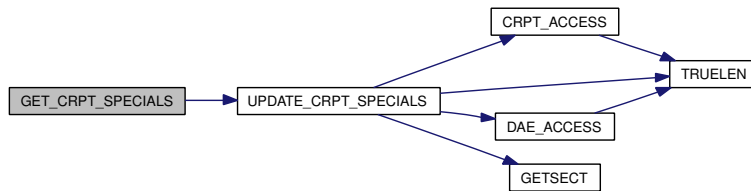


**7.34.2.10 subroutine GET\_CRPT\_SPECIALS** (*INTEGER\*4 NTC, INTEGER\*4 NSPEC, INTEGER\*4 NPERIOD*)

Definition at line 609 of file IXMisis\_raw\_file.f90.

References UPDATE\_CRPT\_SPECIALS().

Here is the call graph for this function:



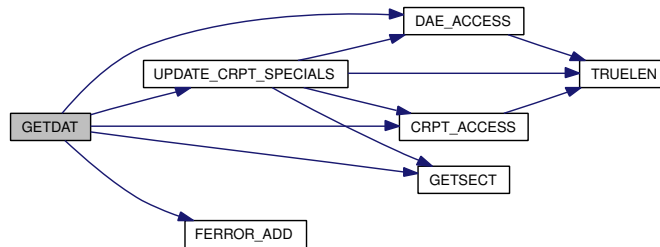
**7.34.2.11 subroutine GETDAT (CHARACTER\*(\*) *RUNID*, INTEGER\*4 *IFSN*, INTEGER\*4 *NOS*, INTEGER\*4, dimension(length) *IDATA*, INTEGER\*4 *LENGTH*, INTEGER\*4 *ERRCODE*)**

Definition at line 705 of file IXMisis\_raw\_file.f90.

References CRPT\_ACCESS(), DAE\_ACCESS(), FERROR\_ADD(), GETSECT(), and UPDATE\_CRPT\_SPECIALS().

Referenced by FASTREAD\_DATA(), GETPARI(), GETRUN(), and READ\_DATA().

Here is the call graph for this function:



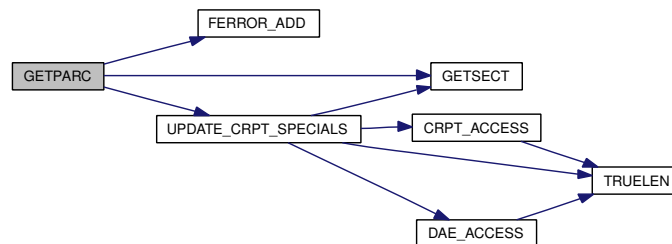
**7.34.2.12 subroutine GETPARC (CHARACTER\*(\*) *RUNID*, CHARACTER\*(\*) parameter *NAME*, CHARACTER\*(\*) dimension(length\_in) *CVALUE*, INTEGER\*4 *LENGTH\_IN*, INTEGER\*4 *LENGTH\_OUT*, INTEGER\*4 *ERRCODE*)**

Definition at line 846 of file IXMisis\_raw\_file.f90.

References FERROR\_ADD(), GETSECT(), and UPDATE\_CRPT\_SPECIALS().

Referenced by FASTREAD\_DATA(), and READ\_DATA().

Here is the call graph for this function:



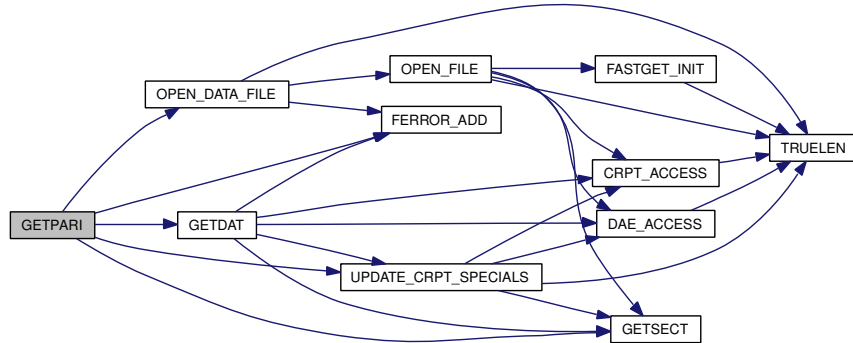
**7.34.2.13** subroutine **GETPARI** (**CHARACTER**\*(\*) *RUNID*, **CHARACTER**\*(\*) *NAME*, **INTEGER**\*4, **dimension**(*length\_in*) *IVALUE*, **INTEGER**\*4 *LENGTH\_IN*, **INTEGER**\*4 *LENGTH\_OUT*, **INTEGER**\*4 *ERRCODE*)

Definition at line 1065 of file IXMisis\_raw\_file.f90.

References `FERROR_ADD()`, `GETDAT()`, `GETSECT()`, `OPEN_DATA_FILE()`, and `UPDATE_CRPT_SPECIALS()`.

Referenced by `FASTREAD_DATA()`, and `READ_DATA()`.

Here is the call graph for this function:



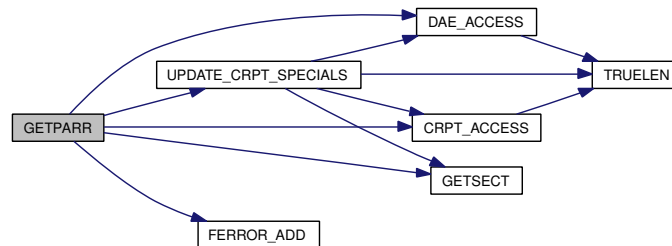
**7.34.2.14** subroutine **GETPARR** (**CHARACTER**\*(\*) *RUNID*, **CHARACTER**\*(\*) *NAME*, **INTEGER**\*4, **dimension**(*length\_in*) *RVALUE*, **INTEGER**\*4 *LENGTH\_IN*, **INTEGER**\*4 *LENGTH\_OUT*, **INTEGER**\*4 *ERRCODE*)

Definition at line 2144 of file IXMisis\_raw\_file.f90.

References `CRPT_ACCESS()`, `DAE_ACCESS()`, `FERROR_ADD()`, `GETSECT()`, and `UPDATE_CRPT_SPECIALS()`.

Referenced by `FASTREAD_DATA()`, and `READ_DATA()`.

Here is the call graph for this function:



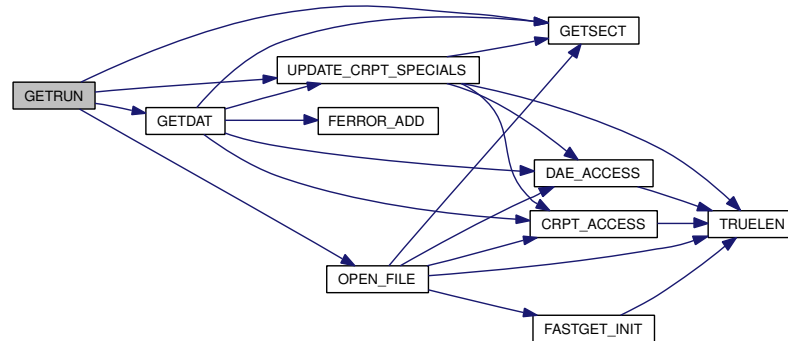


**7.34.2.15** subroutine **GETRUN** (**CHARACTER**\*(\*) *RUNID*,  
**INTEGER**\*4,dimension(length) *IARRAY*, **INTEGER**\*4 *LENGTH*,  
**INTEGER**\*4 *IERROR*)

Definition at line 1486 of file IXMisis\_raw\_file.f90.

References GETDAT(), GETSECT(), OPEN\_FILE(), and UPDATE\_CRPT\_SPECIALS().

Here is the call graph for this function:



**7.34.2.16** subroutine **GETSECT** (**INTEGER**\*4 *ISTART*, **INTEGER**\*4 *ILONG*,  
**INTEGER**\*4,dimension(ilon) *IVALUE*, **INTEGER**\*4 *IUNIT*,  
**INTEGER**\*4 *IERR*)

Definition at line 2485 of file IXMisis\_raw\_file.f90.

Referenced by GETDAT(), GETPARC(), GETPARI(), GETPARR(), GETRUN(), OPEN\_FILE(), and UPDATE\_CRPT\_SPECIALS().

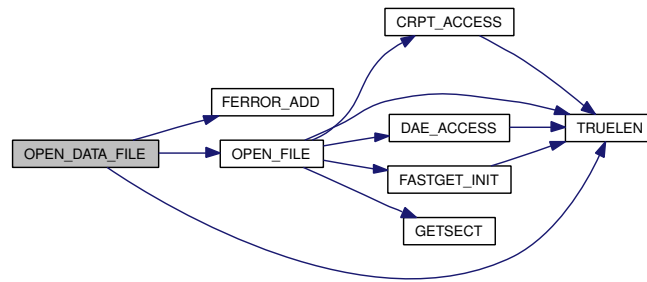
**7.34.2.17** subroutine **OPEN\_DATA\_FILE** (**CHARACTER**\*(\*) *RUNID*,  
**INTEGER**\*4 *NTC*, **INTEGER**\*4 *NDET*, **INTEGER**\*4 *NUSE*,  
**INTEGER**\*4 *ERRCODE*)

Definition at line 1549 of file IXMisis\_raw\_file.f90.

References FERROR\_ADD(), OPEN\_FILE(), and TRUELEN().

Referenced by GETPARI().

Here is the call graph for this function:



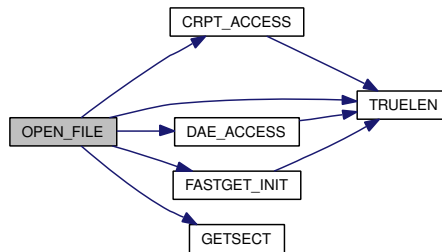
#### 7.34.2.18 subroutine OPEN\_FILE (CHARACTER\*(\*) RUNID, LOGICAL FOUND)

Definition at line 1603 of file IXMisis\_raw\_file.f90.

References CRPT\_ACCESS(), DAE\_ACCESS(), FASTGET\_INIT(), GETSECT(), and TRUELEN().

Referenced by GETRUN(), and OPEN\_DATA\_FILE().

Here is the call graph for this function:

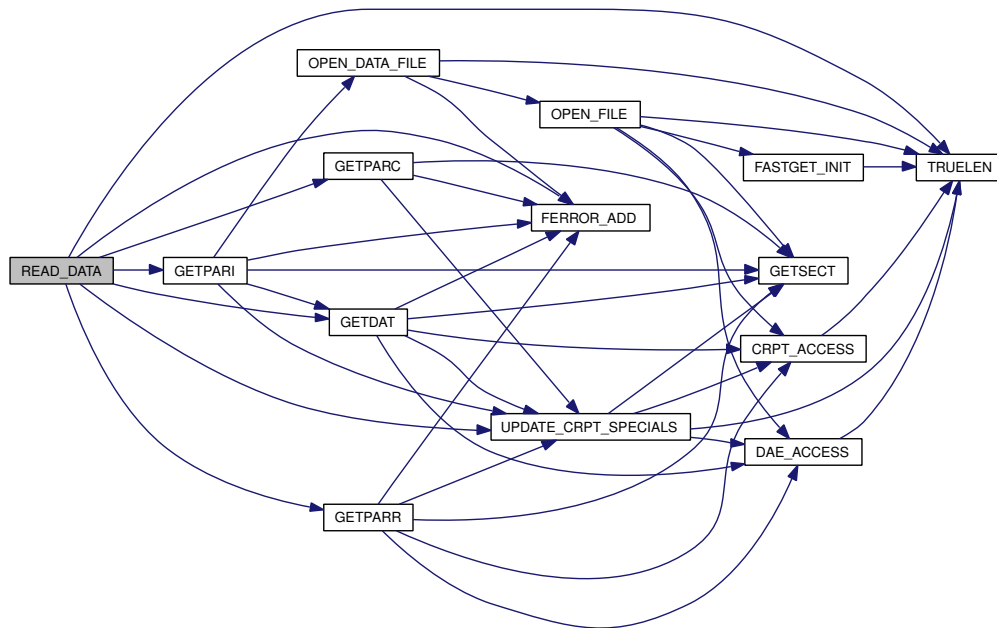


#### 7.34.2.19 subroutine READ\_DATA (CHARACTER\*(\*) RUNID, INTEGER\*4 ERRRCODE, INTEGER\*4 ISPEC, REAL\*4, dimension(ndetmax) DELT\_WORK, INTEGER\*4, dimension(ndetmax) SPEC\_WORK, REAL\*4, dimension(ndetmax) TTHE\_WORK, REAL\*4, dimension(ndetmax) L2\_WORK, INTEGER\*4 NDETMAX, REAL\*4, dimension(ntcmax) TCB, INTEGER\*4, dimension(ntcmax) IDAT, INTEGER\*4 NTCMAX, REAL\*4 L1, REAL\*4 L2, REAL\*4 TTHE, REAL\*4 DELT, REAL\*4 PHI, CHARACTER\*80 RUN\_TITLE, REAL\*4 DURATION, CHARACTER\*21 COMBINED\_TIME, CHARACTER\*20 USER\_NAME, CHARACTER\*8 INST\_NAME, CHARACTER\*5 RUN\_NO, USER\_TABLES, INTEGER\*4 NUSE, INTEGER\*4 QUICK)

Definition at line 1757 of file IXMisis\_raw\_file.f90.

References FERROR\_ADD(), GETDAT(), GETPARC(), GETPARI(), GETPARR(), TRUELEN(), and UPDATE\_CRPT\_SPECIALS().

Here is the call graph for this function:



#### 7.34.2.20 INTEGER TRUELEN (CHARACTER\*(\*) *STRING*)

Definition at line 2003 of file IXMisis\_raw\_file.f90.

Referenced by CRPT\_ACCESS(), DAE\_ACCESS(), FASTGET\_INIT(), FASTREAD\_DATA(), FORT\_FILE(), OPEN\_DATA\_FILE(), OPEN\_FILE(), READ\_DATA(), and UPDATE\_CRPT\_SPECIALS().

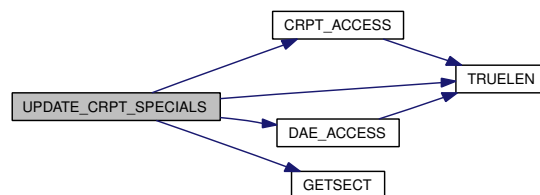
#### 7.34.2.21 subroutine UPDATE\_CRPT\_SPECIALS ()

Definition at line 627 of file IXMisis\_raw\_file.f90.

References CRPT\_ACCESS(), DAE\_ACCESS(), GETSECT(), and TRUELEN().

Referenced by GET\_CRPT\_SPECIALS(), GETDAT(), GETPARC(), GETPARI(), GETPARR(), GETRUN(), and READ\_DATA().

Here is the call graph for this function:



## 7.35 libclasses/IXMlattice.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMlattice.f90:



### Namespaces

- namespace `IXMlattice`

### Classes

- struct `IXMlattice::IXTlattice`

### Defines

- `#define IXD_TYPE lattice`
- `#define IXD_DESCRIPTION "IXTlattice class"`
- `#define IXD_TYPE lattice`
- `#define IXD_SQTYPE 'lattice'`

### Functions

- subroutine `IXMlattice::IXFcheck_lattice (lattice, status)`
- subroutine `IXMlattice::IXFoperation_run_lattice (op, field, arg, status)`
- subroutine `IXMlattice::IXFset_lattice (lattice, status, a, b, c, alpha, beta, gamma, space_group, ref)`
- subroutine `IXMlattice::IXFget_lattice (lattice, status, a, b, c, alpha, beta, gamma, space_group, wout)`
- subroutine `IXMlattice::IXFdestroy_lattice (lattice, status)`
- subroutine `IXMlattice::IXFcreate_lattice (lattice, a, b, c, alpha, beta, gamma, space_group, status)`

#### 7.35.1 Define Documentation

7.35.1.1 `#define IXD_DESCRIPTION "IXTlattice class"`

7.35.1.2 `#define IXD_SQTYPE 'lattice'`

7.35.1.3 `#define IXD_TYPE lattice`

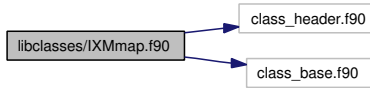
7.35.1.4 `#define IXD_TYPE lattice`

## 7.36 libclasses/IXMmap.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMmap.f90:



### Namespaces

- namespace `IXMmap`

### Classes

- struct `IXMmap::IXTmap`

### Defines

- `#define IXD_TYPE map`
- `#define IXD_DESCRIPTION "IXTmap class"`
- `#define IXD_TYPE map`
- `#define IXD_SQTYPE 'map'`

### Functions

- subroutine `IXMmap::IXFoperation_run_map` (`op`, `field`, `arg`, `status`)
- subroutine `IXMmap::IXFcheck_map` (`arg`, `status`)
- subroutine `IXMmap::IXFcreate_map` (`map`, `work_no`, `total_spec`, `spec_ind`, `spec_no`, `status`)
- subroutine `IXMmap::IXFdestroy_map` (`map`, `status`)
- subroutine `IXMmap::IXFset_map` (`map`, `status`, `work_no`, `total_spec`, `spec_ind`, `spec_no`, `ref`)
- subroutine `IXMmap::IXFget_map` (`map`, `status`, `work_no`, `total_spec`, `spec_ind`, `spec_no`, `wout`)
- subroutine `IXMmap::IXFget_ptr_map` (`map`, `work_no`, `total_spec`, `spec_ind`, `spec_no`)
- subroutine `IXMmap::IXFget_alloc_map` (`map`, `status`, `work_no`, `total_spec`, `spec_ind`, `spec_no`, `wout`)
- subroutine `IXMmap::IXFread_dso_map` (`map`, `dso`, `status`)
- subroutine `IXMmap::IXFfileread_map` (`map`, `fname`, `status`)
- subroutine `IXMmap::IXFread_map` (`fname`, `nspec`, `spec_ind`, `specs`, `wn`, `status`, `wk_spec`)
- subroutine `IXMmap::IXFwkspec_map` (`map`, `wk_spec`)
- subroutine `IXMmap::IXFpopulate_map_dso` (`map`, `dso`, `fpath`, `maptype`, `status`)

- subroutine IXMmap::IXFrawfile\_popmon\_map (map, inputsource, status)
- subroutine IXMmap::IXFrawfile\_popdet\_map (map, inputsource, status)
- subroutine IXMmap::IXFverify\_period\_map (Vmap, period, rawfile, status)

### 7.36.1 Define Documentation

7.36.1.1 #define IXD\_DESCRIPTION "IXTmap class"

7.36.1.2 #define IXD\_SQTYPE 'map'

7.36.1.3 #define IXD\_TYPE map

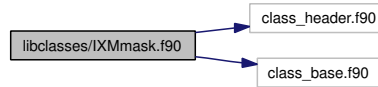
7.36.1.4 #define IXD\_TYPE map

## 7.37 libclasses/IXMmask.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMmask.f90:



### Namespaces

- namespace `IXMmask`

### Classes

- struct `IXMmask::IXTmask`

### Defines

- `#define IXD_TYPE mask`
- `#define IXD_DESCRIPTION "IXTmask class"`
- `#define IXD_TYPE mask`
- `#define IXD_SQTYPE 'mask'`

### Functions

- subroutine `IXMmask::IXFdestroy_mask (arg, status)`
- subroutine `IXMmask::IXFoperation_run_mask (op, field, arg, status)`
- subroutine `IXMmask::IXFget_mask (mask, status, mask_array, wout)`
- subroutine `IXMmask::IXFcreate_mask (mask, mask_array, status)`
- subroutine `IXMmask::IXFset_mask (mask, status, mask_array, ref)`
- subroutine `IXMmask::IXFcheck_mask (w1, status)`
- subroutine `IXMmask::IXFget_ptr_mask (mask, mask_array)`
- subroutine `IXMmask::IXFget_alloc_mask (mask, status, mask_array, wout)`
- subroutine `IXMmask::IXFread_dso_mask (mask, dso, status)`
- subroutine `IXMmask::IXFreadgen_dso_mask (mask, dso, gentype, status)`
- subroutine `IXMmask::IXFfileread_mask (mask, filename, status)`
- subroutine `IXMmask::IXFread_mask (filename, mask_array, status)`
- subroutine `IXMmask::IXFpopulate_mask_dso (mask, dso, fpath, masktype, status)`

### 7.37.1 Define Documentation

7.37.1.1 `#define IXD_DESCRIPTION "IXTmask class"`

7.37.1.2 `#define IXD_SQTYPE 'mask'`

7.37.1.3 `#define IXD_TYPE mask`

7.37.1.4 `#define IXD_TYPE mask`

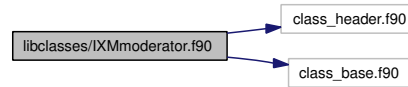


## 7.38 libclasses/IXMmoderator.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMmoderator.f90:



### Namespaces

- namespace **IXMmoderator**

### Classes

- struct **IXMmoderator::IXTmoderator**

### Defines

- `#define IXD_TYPE moderator`
- `#define IXD_DESCRIPTION "IXTmoderator class"`
- `#define IXD_TYPE moderator`
- `#define IXD_SQTYPE 'moderator'`

### Functions

- subroutine **IXMmoderator::IXFdestroy\_moderator** (arg, status)
- subroutine **IXMmoderator::IXFoperation\_run\_moderator** (op, field, arg, status)
- subroutine **IXMmoderator::IXFcreate\_moderator** (moderator, name, distance, width, height, thickness, angle, temperature, pulse\_model, pulse\_pars, status)
- subroutine **IXMmoderator::IXFset\_moderator** (moderator, status, name, distance, width, height, thickness, angle, temperature, pulse\_model, pulse\_pars, ref)
- subroutine **IXMmoderator::IXFget\_moderator** (moderator, status, name, distance, width, height, thickness, angle, temperature, &pulse\_model, pulse\_pars, wout)
- subroutine **IXMmoderator::IXFget\_ptr\_moderator** (moderator, pars\_ptr)
- subroutine **IXMmoderator::IXFget\_alloc\_moderator** (moderator, status, name, distance, width, height, thickness, angle, temperature, &pulse\_model, pulse\_pars, wout)
- subroutine **IXMmoderator::IXFcheck\_moderator** (moderator, status)

### 7.38.1 Define Documentation

7.38.1.1 `#define IXD_DESCRIPTION "IXTmoderator class"`

7.38.1.2 `#define IXD_SQTYPE 'moderator'`

7.38.1.3 `#define IXD_TYPE moderator`

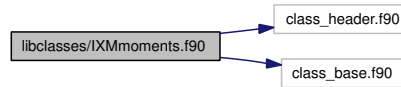
7.38.1.4 `#define IXD_TYPE moderator`

## 7.39 libclasses/IXMmoments.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMmoments.f90:



### Namespaces

- namespace **IXMmoments**

### Classes

- struct **IXMmoments::IXTmoments**

### Defines

- `#define IXD_TYPE moments`
- `#define IXD_DESCRIPTION "IXTmoments class"`
- `#define IXD_TYPE moments`
- `#define IXD_SQTYPE 'moments'`

### Functions

- subroutine **IXMmoments::IXFdestroy\_moments** (arg, status)
- subroutine **IXMmoments::IXFcheck\_moments** (arg, status)
- subroutine **IXMmoments::IXFoperation\_run\_moments** (op, field, arg, status)
- subroutine **IXMmoments::IXFcreate\_moments** (arg, area, bkgd\_xmean, bkgd\_slope, xmax, c\_fwhh, fwhh, xmean, sigma, g1, g2, status)
- subroutine **IXMmoments::IXFset\_moments** (var, status, area, bkgd\_xmean, bkgd\_slope, xmax, c\_fwhh, fwhh, xmean, sigma, g1, g2, ref)
- subroutine **IXMmoments::IXFget\_moments** (var, status, area, bkgd\_xmean, bkgd\_slope, xmax, c\_fwhh, fwhh, xmean, sigma, g1, g2, wout)

#### 7.39.1 Define Documentation

**7.39.1.1** `#define IXD_DESCRIPTION "IXTmoments class"`

**7.39.1.2** `#define IXD_SQTYPE 'moments'`

**7.39.1.3** `#define IXD_TYPE moments`

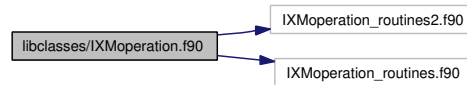
**7.39.1.4** `#define IXD_TYPE moments`

## 7.40 libclasses/IXMoperation.f90 File Reference

```
#include "IXMoperation_routines2.f90"
```

```
#include "IXMoperation_routines.f90"
```

Include dependency graph for IXMoperation.f90:



### Namespaces

- namespace **IXMoperation**

### Classes

- struct **IXMoperation::IXTop\_display**
- struct **IXMoperation::IXTop\_matlabread**
- struct **IXMoperation::IXTop\_matlabwrite**
- struct **IXMoperation::IXTop\_get**
- struct **IXMoperation::IXTop\_set**
- struct **IXMoperation::IXTop\_fileread**
- struct **IXMoperation::IXTop\_filewrite**
- struct **IXMoperation::IXTop\_init**
- struct **IXMoperation::IXToperation**
- interface **IXMoperation::IXFoperationMake**
- interface **IXMoperation::IXFoperation\_run**
- interface **IXMoperation::IXFoperation\_run**
- interface **IXMoperation::IXFoperation\_run\_ptr**
- interface **IXMoperation::IXFoperation\_run\_alloc**
- interface **IXMoperation::IXFoperationPrint**
- interface **IXMoperation::IXFoperation\_run**
- interface **IXMoperation::IXFdisplay**
- interface **IXMoperation::IXFcheck**

### Defines

- **#define IXD\_NAME 1c**
- **#define IXD\_TYPE character(len=\*)**
- **#define IXD\_DIMS :**
- **#define IXD\_PREFIX**
- **#define IXD\_QUALIFIER target**
- **#define IXD\_CHECK(\_\_val) .true.**
- **#define IXD\_UNDEF IXCundef\_char**
- **#define IXD\_INITIALISE(\_\_val) \_\_val = IXCundef\_char**
- **#define IXD\_NAME 1d**
- **#define IXD\_TYPE real(dp)**

- #define IXD\_DIMS :
- #define IXD\_PREFIX
- #define IXD\_QUALIFIER target
- #define IXD\_CHECK(\_\_val) .true.
- #define IXD\_UNDEF IXCundef\_dp
- #define IXD\_INITIALISE(\_\_val) \_\_val = IXCundef\_dp
- #define IXD\_NAME 2d
- #define IXD\_TYPE real(dp)
- #define IXD\_DIMS :,:
- #define IXD\_PREFIX
- #define IXD\_QUALIFIER target
- #define IXD\_CHECK(\_\_val) .true.
- #define IXD\_UNDEF IXCundef\_dp
- #define IXD\_INITIALISE(\_\_val) \_\_val = IXCundef\_dp
- #define IXD\_NAME 3d
- #define IXD\_TYPE real(dp)
- #define IXD\_DIMS :,,::
- #define IXD\_PREFIX
- #define IXD\_QUALIFIER target
- #define IXD\_CHECK(\_\_val) .true.
- #define IXD\_UNDEF IXCundef\_dp
- #define IXD\_INITIALISE(\_\_val) \_\_val = IXCundef\_dp
- #define IXD\_NAME 4d
- #define IXD\_TYPE real(dp)
- #define IXD\_DIMS :,,:,::
- #define IXD\_PREFIX
- #define IXD\_QUALIFIER target
- #define IXD\_CHECK(\_\_val) .true.
- #define IXD\_UNDEF IXCundef\_dp
- #define IXD\_INITIALISE(\_\_val) \_\_val = IXCundef\_dp
- #define IXD\_NAME 1i
- #define IXD\_TYPE integer(i4b)
- #define IXD\_DIMS :
- #define IXD\_PREFIX
- #define IXD\_QUALIFIER target
- #define IXD\_CHECK(\_\_val) .true.
- #define IXD\_UNDEF IXCundef\_i4b
- #define IXD\_INITIALISE(\_\_val) \_\_val = IXCundef\_i4b
- #define IXD\_NAME 2i
- #define IXD\_TYPE integer(i4b)
- #define IXD\_DIMS :,:
- #define IXD\_PREFIX
- #define IXD\_QUALIFIER target
- #define IXD\_CHECK(\_\_val) .true.
- #define IXD\_UNDEF IXCundef\_i4b
- #define IXD\_INITIALISE(\_\_val) \_\_val = IXCundef\_i4b
- #define IXD\_NAME 3i
- #define IXD\_TYPE integer(i4b)
- #define IXD\_DIMS :,,::
- #define IXD\_PREFIX

---

```

• #define IXD_QUALIFIER target
• #define IXD_CHECK(__val) .true.
• #define IXD_UNDEF IXCundef_i4b
• #define IXD_INITIALISE(__val) __val = IXCundef_i4b
• #define IXD_NAME 4i
• #define IXD_TYPE integer(i4b)
• #define IXD_DIMS :,,:,:
• #define IXD_PREFIX
• #define IXD_QUALIFIER target
• #define IXD_CHECK(__val) .true.
• #define IXD_UNDEF IXCundef_i4b
• #define IXD_INITIALISE(__val) __val = IXCundef_i4b
• #define IXD_NAME Ptr1d
• #define IXD_TYPE real(dp)
• #define IXD_DIMS :
• #define IXD_PREFIX Ptr
• #define IXD_QUALIFIER pointer
• #define IXD_CHECK(__val) associated(__val)
• #define IXD_UNDEF IXCundef_dp
• #define IXD_INITIALISE(__val) nullify(__val)
• #define IXD_NAME Ptr2d
• #define IXD_TYPE real(dp)
• #define IXD_DIMS :,
• #define IXD_PREFIX Ptr
• #define IXD_QUALIFIER pointer
• #define IXD_CHECK(__val) associated(__val)
• #define IXD_UNDEF IXCundef_dp
• #define IXD_INITIALISE(__val) nullify(__val)
• #define IXD_NAME Ptr3d
• #define IXD_TYPE real(dp)
• #define IXD_DIMS :,,:
• #define IXD_PREFIX Ptr
• #define IXD_QUALIFIER pointer
• #define IXD_CHECK(__val) associated(__val)
• #define IXD_UNDEF IXCundef_dp
• #define IXD_INITIALISE(__val) nullify(__val)
• #define IXD_NAME Ptr4d
• #define IXD_TYPE real(dp)
• #define IXD_DIMS :,,:,:
• #define IXD_PREFIX Ptr
• #define IXD_QUALIFIER pointer
• #define IXD_CHECK(__val) associated(__val)
• #define IXD_UNDEF IXCundef_dp
• #define IXD_INITIALISE(__val) nullify(__val)
• #define IXD_NAME Ptr1i
• #define IXD_TYPE integer(i4b)
• #define IXD_DIMS :
• #define IXD_PREFIX Ptr
• #define IXD_QUALIFIER pointer
• #define IXD_CHECK(__val) associated(__val)

```

- #define IXD\_UNDEF IXCundef\_i4b
- #define IXD\_INITIALISE(\_\_val) nullify(\_\_val)
- #define IXD\_NAME Ptr2i
- #define IXD\_TYPE integer(i4b)
- #define IXD\_DIMS :,:
- #define IXD\_PREFIX Ptr
- #define IXD\_QUALIFIER pointer
- #define IXD\_CHECK(\_\_val) associated(\_\_val)
- #define IXD\_UNDEF IXCundef\_i4b
- #define IXD\_INITIALISE(\_\_val) nullify(\_\_val)
- #define IXD\_NAME Ptr3i
- #define IXD\_TYPE integer(i4b)
- #define IXD\_DIMS :,,::
- #define IXD\_PREFIX Ptr
- #define IXD\_QUALIFIER pointer
- #define IXD\_CHECK(\_\_val) associated(\_\_val)
- #define IXD\_UNDEF IXCundef\_i4b
- #define IXD\_INITIALISE(\_\_val) nullify(\_\_val)
- #define IXD\_NAME Ptr4i
- #define IXD\_TYPE integer(i4b)
- #define IXD\_DIMS :,,:,::
- #define IXD\_PREFIX Ptr
- #define IXD\_QUALIFIER pointer
- #define IXD\_CHECK(\_\_val) associated(\_\_val)
- #define IXD\_UNDEF IXCundef\_i4b
- #define IXD\_INITIALISE(\_\_val) nullify(\_\_val)
- #define IXD\_NAME Alloc1c
- #define IXD\_TYPE character(len=\*)
- #define IXD\_DIMS :
- #define IXD\_PREFIX Alloc
- #define IXD\_QUALIFIER allocatable
- #define IXD\_CHECK(\_\_val) allocated(\_\_val)
- #define IXD\_UNDEF IXCundef\_char
- #define IXD\_INITIALISE(\_\_val) !allocate(\_\_val(1));deallocate(\_\_val)
- #define IXD\_NAME Alloc1d
- #define IXD\_TYPE real(dp)
- #define IXD\_DIMS :
- #define IXD\_PREFIX Alloc
- #define IXD\_QUALIFIER allocatable
- #define IXD\_CHECK(\_\_val) allocated(\_\_val)
- #define IXD\_UNDEF IXCundef\_dp
- #define IXD\_INITIALISE(\_\_val) !allocate(\_\_val(1));deallocate(\_\_val)
- #define IXD\_NAME Alloc2d
- #define IXD\_TYPE real(dp)
- #define IXD\_DIMS :,:
- #define IXD\_PREFIX Alloc
- #define IXD\_QUALIFIER allocatable
- #define IXD\_CHECK(\_\_val) allocated(\_\_val)
- #define IXD\_UNDEF IXCundef\_dp
- #define IXD\_INITIALISE(\_\_val) !allocate(\_\_val(1));deallocate(\_\_val)

---

```

• #define IXD_NAME Alloc3d
• #define IXD_TYPE real(dp)
• #define IXD_DIMS :,:
• #define IXD_PREFIX Alloc
• #define IXD_QUALIFIER allocatable
• #define IXD_CHECK(__val) allocated(__val)
• #define IXD_UNDEF IXCundef_dp
• #define IXD_INITIALISE(__val) !allocate(__val(1));deallocate(__val)
• #define IXD_NAME Alloc4d
• #define IXD_TYPE real(dp)
• #define IXD_DIMS :,:,:
• #define IXD_PREFIX Alloc
• #define IXD_QUALIFIER allocatable
• #define IXD_CHECK(__val) allocated(__val)
• #define IXD_UNDEF IXCundef_dp
• #define IXD_INITIALISE(__val) !allocate(__val(1));deallocate(__val)
• #define IXD_NAME Alloc1i
• #define IXD_TYPE integer(i4b)
• #define IXD_DIMS :
• #define IXD_PREFIX Alloc
• #define IXD_QUALIFIER allocatable
• #define IXD_CHECK(__val) allocated(__val)
• #define IXD_UNDEF IXCundef_i4b
• #define IXD_INITIALISE(__val) !allocate(__val(1));deallocate(__val)
• #define IXD_NAME Alloc2i
• #define IXD_TYPE integer(i4b)
• #define IXD_DIMS :,
• #define IXD_PREFIX Alloc
• #define IXD_QUALIFIER allocatable
• #define IXD_CHECK(__val) allocated(__val)
• #define IXD_UNDEF IXCundef_i4b
• #define IXD_INITIALISE(__val) !allocate(__val(1));deallocate(__val)
• #define IXD_NAME Alloc3i
• #define IXD_TYPE integer(i4b)
• #define IXD_DIMS :,:
• #define IXD_PREFIX Alloc
• #define IXD_QUALIFIER allocatable
• #define IXD_CHECK(__val) allocated(__val)
• #define IXD_UNDEF IXCundef_i4b
• #define IXD_INITIALISE(__val) !allocate(__val(1));deallocate(__val)
• #define IXD_NAME Alloc4i
• #define IXD_TYPE integer(i4b)
• #define IXD_DIMS :,:,:
• #define IXD_PREFIX Alloc
• #define IXD_QUALIFIER allocatable
• #define IXD_CHECK(__val) allocated(__val)
• #define IXD_UNDEF IXCundef_i4b
• #define IXD_INITIALISE(__val) !allocate(__val(1));deallocate(__val)
• #define IXD_NAME c
• #define IXD_TYPE character(len=*)

```



- #define IXD\_FORMAT charform
- #define IXD\_NUMPRINT 1
- #define IXD\_NAME d
- #define IXD\_TYPE real(dp)
- #define IXD\_FORMAT realform
- #define IXD\_NUMPRINT 10
- #define IXD\_NAME i
- #define IXD\_TYPE integer(i4b)
- #define IXD\_FORMAT intform
- #define IXD\_NUMPRINT 10

## Functions

- logical IXMoperation::IXFfile\_op (op)
- subroutine IXMoperation::initialiseOperation (op)
- subroutine IXMoperation::removeBlanks (buffer)
- subroutine IXMoperation::makeArrayNameString (buffer, name, dims\_array)
- type(IXTop\_matlabread) IXMoperation::IXFop\_matlabreadMake (prhs)
- type(IXTop\_matlabwrite) IXMoperation::IXFop\_matlabwriteMake (plhs)
- type(IXTop\_fileread) IXMoperation::IXFop\_filereadMake (fio, path)
- type(IXTop\_filewrite) IXMoperation::IXFop\_filewriteMake (fio, path)
- type(IXTop\_get) IXMoperation::IXFop\_getMake (wrapped\_var)
- type(IXTop\_set) IXMoperation::IXFop\_setMake (wrapped\_var)
- type(IXTop\_init) IXMoperation::IXFop\_initMake (i)
- subroutine IXMoperation::IXFoperationArrayInit (op, name, field, n, status)
- subroutine IXMoperation::IXFoperationStart (op, name, field, status)
- subroutine IXMoperation::IXFoperationFinish (op, field, status)
- subroutine IXMoperation::makeOperationDisplay (op, op\_display, status)
- subroutine IXMoperation::makeOperationSet (op, op\_set, status)
- subroutine IXMoperation::makeOperationGet (op, op\_get, status)
- subroutine IXMoperation::makeOperationMatlabRead (op, op\_matlabread, status)
- subroutine IXMoperation::makeOperationMatlabWrite (op, op\_matlabwrite, status)
- subroutine IXMoperation::makeOperationFileRead (op, op\_fileread, status)
- subroutine IXMoperation::makeOperationFileWrite (op, op\_filewrite, status)
- subroutine IXMoperation::makeOperationInit (op, op\_init, status)
- subroutine IXMoperation::runOperationCharacter (op, name, value, status)
- subroutine IXMoperation::runOperationReal (op, name, value, status)
- subroutine IXMoperation::runOperationLogical (op, name, value, status)
- subroutine IXMoperation::IXFoperationCleanup (op, status)
- subroutine IXMoperation::runOperationInteger (op, name, value, status)
- subroutine IXMoperation::IXFoperation\_run\_data\_source (op, field, arg, status)
- subroutine IXMoperation::IXFoperation\_run\_array\_data\_source (op, name, value, status)
- subroutine IXMoperation::IXFdisplay\_data\_source (value, status)
- subroutine IXMoperation::IXFdisplay\_array\_data\_source (w1, s)
- subroutine IXMoperation::IXFoperation\_run\_fileio (op, name, value, status)

- subroutine IXMoperation::IXFoperation\_run\_array\_fileio (op, name, value, status)
- subroutine IXMoperation::IXFcheck\_fileio (value, status)
- subroutine IXMoperation::IXFdisplay\_fileio (value, status)
- subroutine IXMoperation::IXFdisplay\_array\_fileio (w1, s)
- subroutine IXMoperation::IXFcheck\_array\_fileio (w1, s)
- subroutine IXMoperation::IXFoperation\_run\_history (op, field, arg, status)
- subroutine IXMoperation::IXFoperation\_run\_array\_history (op, name, value, status)
- subroutine IXMoperation::IXFdisplay\_history (value, status)
- subroutine IXMoperation::IXFdisplay\_array\_history (w1, s)

## Variables

- character(len=\*), parameter IXMoperation::nameform = '( " "
- character(len=\*), parameter IXMoperation::A
- character(len=\*), parameter IXMoperation::i = ')'
- character(len=\*), dimension(g9.3, 1x), parameter IXMoperation::realform = '( " "
- character(len=\*), dimension(i5, 1x), parameter IXMoperation::intform = '( " "
- character(len=\*), dimension(a), parameter IXMoperation::charform = '( " "
- character(len=\*), parameter IXMoperation::fieldnameformat = '(A
- character(len=\*), parameter IXMoperation::\_
- character(len=\*), parameter IXMoperation::I5

### 7.40.1 Define Documentation

7.40.1.1 `#define IXD_CHECK(__val) allocated(__val)`

7.40.1.2 `#define IXD_CHECK(__val) allocated(__val)`

7.40.1.3 `#define IXD_CHECK(__val) allocated(__val)`

7.40.1.4 `#define IXD_CHECK(__val) allocated(__val)`

7.40.1.5 `#define IXD_CHECK(__val) allocated(__val)`

7.40.1.6 `#define IXD_CHECK(__val) allocated(__val)`

7.40.1.7 `#define IXD_CHECK(__val) allocated(__val)`

7.40.1.8 `#define IXD_CHECK(__val) allocated(__val)`

7.40.1.9 `#define IXD_CHECK(__val) allocated(__val)`

7.40.1.10 `#define IXD_CHECK(__val) associated(__val)`

7.40.1.11 `#define IXD_CHECK(__val) associated(__val)`

7.40.1.12 `#define IXD_CHECK(__val) associated(__val)`

7.40.1.13 `#define IXD_CHECK(__val) associated(__val)`

7.40.1.14 `#define IXD_CHECK(__val) associated(__val)`

7.40.1.15 `#define IXD_CHECK(__val) associated(__val)`

7.40.1.16 `#define IXD_CHECK(__val) associated(__val)`

7.40.1.17 `#define IXD_CHECK(__val) associated(__val)`

7.40.1.18 `#define IXD_CHECK(__val) .true.`

7.40.1.19 `#define IXD_CHECK(__val) .true.`

7.40.1.20 `#define IXD_CHECK(__val) .true.`

7.40.1.21 `#define IXD_CHECK(__val) .true.`

7.40.1.22 `#define IXD_CHECK(__val) .true.`

7.40.1.23 `#define IXD_CHECK(__val) .true.`

7.40.1.24 `#define IXD_CHECK(__val) .true.`

7.40.1.25 `#define IXD_CHECK(__val) .true.`

7.40.1.26 `#define IXD_CHECK(__val) .true.`

7.40.1.27 `#define IXD_DIMS ::,::,`

---

Generated on Mon Feb 19 18:32:25 2007 for LIBISIS by Doxygen

7.40.1.28 `#define IXD_DIMS ::,::,`

7.40.1.29 `#define IXD_DIMS :,:`

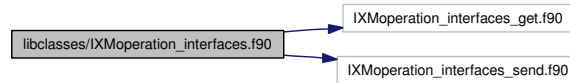
7.40.1.30 `#define IXD_DIMS :`

## 7.41 libclasses/IXMoperation\_interfaces.f90 File Reference

```
#include "IXMoperation_interfaces_get.f90"
```

```
#include "IXMoperation_interfaces_send.f90"
```

Include dependency graph for IXMoperation\_interfaces.f90:



### Namespaces

- namespace `IXMoperation_interfaces`

### Classes

- interface `IXMoperation_interfaces::IXBgetFromBinding`
- interface `IXMoperation_interfaces::IXBgetFromBindingAlloc`

### Defines

- `#define IXD_NAME Char`
- `#define IXD_TYPE character(len=*)`
- `#define IXD_NAME i4b`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_NAME dp`
- `#define IXD_TYPE real(dp)`
- `#define IXD_NAME Logical`
- `#define IXD_TYPE logical`
- `#define IXD_NAME dp1`
- `#define IXD_TYPE real(dp)`
- `#define IXD_DIMS :`
- `#define IXD_NAME dp2`
- `#define IXD_TYPE real(dp)`
- `#define IXD_DIMS :,:`
- `#define IXD_NAME dp3`
- `#define IXD_TYPE real(dp)`
- `#define IXD_DIMS :,::`
- `#define IXD_NAME dp4`
- `#define IXD_TYPE real(dp)`
- `#define IXD_DIMS :,:,::`
- `#define IXD_NAME i1`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_DIMS :`
- `#define IXD_NAME i2`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_DIMS :,:`

- `#define IXD_NAME i3`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME i4`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME c1`
- `#define IXD_TYPE character(len=*)`
- `#define IXD_DIMS :`
- `#define IXD_NAME Ptrdp1`
- `#define IXD_TYPE real(dp),pointer`
- `#define IXD_DIMS :`
- `#define IXD_NAME Ptrdp2`
- `#define IXD_TYPE real(dp),pointer`
- `#define IXD_DIMS :,:`
- `#define IXD_NAME Ptrdp3`
- `#define IXD_TYPE real(dp),pointer`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME Ptrdp4`
- `#define IXD_TYPE real(dp),pointer`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME Ptri1`
- `#define IXD_TYPE integer(i4b),pointer`
- `#define IXD_DIMS :`
- `#define IXD_NAME Ptri2`
- `#define IXD_TYPE integer(i4b),pointer`
- `#define IXD_DIMS :,:`
- `#define IXD_NAME Ptri3`
- `#define IXD_TYPE integer(i4b),pointer`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME Ptri4`
- `#define IXD_TYPE integer(i4b),pointer`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME Allocdp1`
- `#define IXD_TYPE real(dp),allocatable`
- `#define IXD_DIMS :`
- `#define IXD_NAME Allocdp2`
- `#define IXD_TYPE real(dp),allocatable`
- `#define IXD_DIMS :,:`
- `#define IXD_NAME Allocdp3`
- `#define IXD_TYPE real(dp),allocatable`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME Allocdp4`
- `#define IXD_TYPE real(dp),allocatable`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME Alloci1`
- `#define IXD_TYPE integer(i4b),allocatable`
- `#define IXD_DIMS :`
- `#define IXD_NAME Alloci2`
- `#define IXD_TYPE integer(i4b),allocatable`

- `#define IXD_DIMS :,:`
- `#define IXD_NAME Alloci3`
- `#define IXD_TYPE integer(i4b),allocatable`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME Alloci4`
- `#define IXD_TYPE integer(i4b),allocatable`
- `#define IXD_DIMS :,,:,::`
- `#define IXD_NAME Allocc1`
- `#define IXD_TYPE character(len=*),allocatable`
- `#define IXD_DIMS :`
- `#define IXD_NAME Char`
- `#define IXD_TYPE character(len=*)`
- `#define IXD_NAME i4b`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_NAME dp`
- `#define IXD_TYPE real(dp)`
- `#define IXD_NAME Logical`
- `#define IXD_TYPE logical`
- `#define IXD_NAME dp1`
- `#define IXD_TYPE real(dp)`
- `#define IXD_DIMS :`
- `#define IXD_NAME dp2`
- `#define IXD_TYPE real(dp)`
- `#define IXD_DIMS :,:`
- `#define IXD_NAME dp3`
- `#define IXD_TYPE real(dp)`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME dp4`
- `#define IXD_TYPE real(dp)`
- `#define IXD_DIMS :,,:,::`
- `#define IXD_NAME i1`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_DIMS :`
- `#define IXD_NAME i2`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_DIMS :,:`
- `#define IXD_NAME i3`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME i4`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_DIMS :,,:,::`
- `#define IXD_NAME c1`
- `#define IXD_TYPE character(len=*)`
- `#define IXD_DIMS :`

## Variables

- integer, external `IXMoperation_interfaces::IXBgetNumberOfElements`
- `integer(cpointer_t)`, external `IXMoperation_interfaces::IXBcreateClassArray`

### 7.41.1 Define Documentation

7.41.1.1 `#define IXD_DIMS :`

7.41.1.2 `#define IXD_DIMS ::,,: :`

7.41.1.3 `#define IXD_DIMS ::,,: :`

7.41.1.4 `#define IXD_DIMS ::, :`

7.41.1.5 `#define IXD_DIMS :`

7.41.1.6 `#define IXD_DIMS ::,,: :`

7.41.1.7 `#define IXD_DIMS ::,,: :`

7.41.1.8 `#define IXD_DIMS ::, :`

7.41.1.9 `#define IXD_DIMS :`

7.41.1.10 `#define IXD_DIMS :`

7.41.1.11 `#define IXD_DIMS ::,,: :`

7.41.1.12 `#define IXD_DIMS ::,,: :`

7.41.1.13 `#define IXD_DIMS ::, :`

7.41.1.14 `#define IXD_DIMS :`

7.41.1.15 `#define IXD_DIMS ::,,: :`

7.41.1.16 `#define IXD_DIMS ::,,: :`

7.41.1.17 `#define IXD_DIMS ::, :`

7.41.1.18 `#define IXD_DIMS :`

7.41.1.19 `#define IXD_DIMS ::,,: :`

7.41.1.20 `#define IXD_DIMS ::,,: :`

7.41.1.21 `#define IXD_DIMS ::, :`

7.41.1.22 `#define IXD_DIMS :`

7.41.1.23 `#define IXD_DIMS ::,,: :`

7.41.1.24 `#define IXD_DIMS ::,,: :`

7.41.1.25 `#define IXD_DIMS ::, :`

7.41.1.26 `#define IXD_DIMS :`

7.41.1.27 `#define IXD_DIMS :`

---

Generated on Mon Feb 19 18:32:25 2007 for LIBISIS by Doxygen

7.41.1.28 `#define IXD_DIMS ::,,: :`

7.41.1.29 `#define IXD_DIMS ::,,: :`

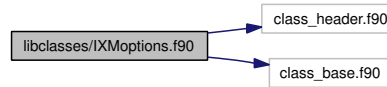
7.41.1.30 `#define IXD_DIMS ::, :`

## 7.42 libclasses/IXMoptions.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMoptions.f90:



### Namespaces

- namespace `IXMoptions`

### Classes

- struct `IXMoptions::IXToptions`

### Defines

- `#define IXD_TYPE options`
- `#define IXD_DESCRIPTION "IXToptions class"`
- `#define IXD_TYPE options`
- `#define IXD_SQTYPE 'options'`

### Functions

- subroutine `IXMoptions::IXFoperation_run_options` (op, field, arg, status)
- subroutine `IXMoptions::IXFset_options` (opt, status, bgrd, m\_units, m\_rebin, d\_units, d\_rebin, ref)
- subroutine `IXMoptions::IXFget_options` (opt, status, bgrd, m\_units, m\_rebin, d\_units, d\_rebin, wout)
- subroutine `IXMoptions::IXFcheck_options` (opt, status)
- subroutine `IXMoptions::IXFdestroy_options` (opt, status)
- subroutine `IXMoptions::IXFcreate_options` (opt, bgrd, m\_units, m\_rebin, d\_units, d\_rebin, status)
- logical `IXMoptions::IXFpresent` (opt, bgrd, m\_units, m\_rebin, d\_units, d\_rebin)

#### 7.42.1 Define Documentation

7.42.1.1 `#define IXD_DESCRIPTION "IXToptions class"`

7.42.1.2 `#define IXD_SQTYPE 'options'`

7.42.1.3 `#define IXD_TYPE options`

7.42.1.4 `#define IXD_TYPE options`

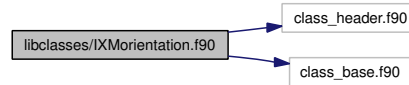


## 7.43 libclasses/IXMorientation.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMorientation.f90:



### Namespaces

- namespace **IXMorientation**

### Classes

- struct **IXMorientation::IXTorientation**
- interface **IXMorientation::operator**
- interface **IXMorientation::IXFsetgen\_orientation**
- interface **IXMorientation::IXFcreate**

### Defines

- `#define IXD_TYPE orientation`
- `#define IXD_DESCRIPTION "IXTorientation class"`
- `#define IXD_TYPE orientation`
- `#define IXD_SQTYPE 'orientation'`

### Functions

- subroutine **IXMorientation::IXFdestroy\_orientation** (arg, status)
- subroutine **IXMorientation::IXFoperation\_run\_orientation** (op, field, arg, status)
- subroutine **IXMorientation::IXFset\_class\_orientation** (self, orientation)
- subroutine **IXMorientation::IXFset\_attributes\_orientation** (self, status, rotmat)
- subroutine **IXMorientation::IXFset\_orientation** (orientation, status, base, rotmat, rotvec, ref)
- subroutine **IXMorientation::IXFget\_orientation** (orientation, status, base, rotmat, rotvec, wout)
- subroutine **IXMorientation::IXFset\_rotvec\_orientation** (self, status, rotvec)
- subroutine **IXMorientation::IXFget\_class\_orientation** (self, orientation)
- subroutine **IXMorientation::IXFget\_attributes\_orientation** (self, status, rotmat)
- subroutine **IXMorientation::IXFget\_rotvec\_orientation** (self, status, rotvec)
- subroutine **IXMorientation::IXFcreate\_class\_orientation** (self, orientation)
- subroutine **IXMorientation::IXFcreate\_orientation** (self, status, rotmat)

- subroutine IXOrientation::IXFcheck\_orientation (orientation, status)
- type(IXTorientation) IXOrientation::IXFtimes\_op\_orientation (or1, or2)
- subroutine IXOrientation::IXFcombine\_orientation (or1, t1, or2, t2, ores, tres)
- subroutine IXOrientation::IXFdifference\_orientation (or1, t1, or2, t2, odiff, tdiff)
- real(dp), dimension(3) IXOrientation::IXFs2sprime\_orientation (or, t, v)
- real(dp), dimension(3) IXOrientation::IXFsprime2s\_orientation (or, t, vprime)

### 7.43.1 Define Documentation

7.43.1.1 #define IXD\_DESCRIPTION "IXTorientation class"

7.43.1.2 #define IXD\_SQTYPE 'orientation'

7.43.1.3 #define IXD\_TYPE orientation

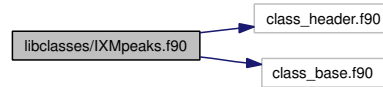
7.43.1.4 #define IXD\_TYPE orientation

## 7.44 libclasses/IXMpeaks.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMpeaks.f90:



### Namespaces

- namespace **IXMpeaks**

### Classes

- struct **IXMpeaks::IXTpeaks**

### Defines

- `#define IXD_TYPE peaks`
- `#define IXD_DESCRIPTION "IXTpeaks class"`
- `#define IXD_TYPE peaks`
- `#define IXD_SQTYPE 'peaks'`

### Functions

- subroutine **IXMpeaks::IXFoperation\_run\_peaks** (op, field, arg, status)
- subroutine **IXMpeaks::IXFset\_peaks** (peaks, status, monitor\_no, integral, irange\_low, irange\_high, integral\_units, moments, moments\_units, ref)
- subroutine **IXMpeaks::IXFget\_peaks** (peaks, status, monitor\_no, integral, irange\_low, irange\_high, integral\_units, moments, moments\_units, wout)
- subroutine **IXMpeaks::IXFcheck\_peaks** (peaks, status)
- subroutine **IXMpeaks::IXFdestroy\_peaks** (peaks, status)
- subroutine **IXMpeaks::IXFcreate\_peaks** (peaks, monitor\_no, integral, irange\_low, irange\_high, integral\_units, moments, moments\_units, status)
- subroutine **IXMpeaks::IXFget\_ptr\_peaks** (peaks, monitor\_no, irange\_low, irange\_high)
- subroutine **IXMpeaks::IXFget\_alloc\_peaks** (peaks, status, monitor\_no, integral, irange\_low, irange\_high, integral\_units, moments, moments\_units, wout)

### 7.44.1 Define Documentation

7.44.1.1 `#define IXD_DESCRIPTION "IXTpeaks class"`

7.44.1.2 `#define IXD_SQTYPE 'peaks'`

7.44.1.3 `#define IXD_TYPE peaks`

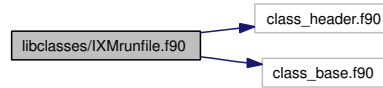
7.44.1.4 `#define IXD_TYPE peaks`

## 7.45 libclasses/IXMrunfile.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMrunfile.f90:



### Namespaces

- namespace `IXMrunfile`

### Classes

- struct `IXMrunfile::IXTrunfile`
- interface `IXMrunfile::IXFunits_runfile`

### Defines

- `#define IXD_TYPE runfile`
- `#define IXD_DESCRIPTION "IXTrunfile class"`
- `#define IXD_TYPE runfile`
- `#define IXD_SQTYPE 'runfile'`

### Functions

- subroutine `IXMrunfile::IXFoperation_run_runfile` (`op`, `field`, `arg`, `status`)
- subroutine `IXMrunfile::IXFget_runfile` (`runfile`, `status`, `title`, `users`, `sample`, `inst`, `det_data`, `mon_data`, `peaks`, `wout`)
- subroutine `IXMrunfile::IXFgetmondata_runfile` (`runfile`, `data2d`, `status`)
- subroutine `IXMrunfile::IXFgetdetdata_runfile` (`runfile`, `data2d`, `status`)
- subroutine `IXMrunfile::IXFgeteival_runfile` (`runfile`, `eival`, `status`)
- subroutine `IXMrunfile::IXFset_runfile` (`runfile`, `status`, `title`, `users`, `sample`, `inst`, `det_data`, `mon_data`, `peaks`, `ref`)
- subroutine `IXMrunfile::IXFdestroy_runfile` (`runfile`, `status`)
- subroutine `IXMrunfile::IXFcreate_runfile` (`runfile`, `title`, `users`, `sample`, `inst`, `det_data`, `mon_data`, `peaks`, `status`)
- subroutine `IXMrunfile::IXFcheck_runfile` (`runfile`, `status`)
- subroutine `IXMrunfile::IXFpopulate_mon_runfile` (`runfile`, `status`, `dso`, `period`, `m_units`, `m_rebin`, `opt`)
- subroutine `IXMrunfile::IXFpopulate_det_runfile` (`runfile`, `status`, `dso`, `period`, `d_units`, `d_rebin`, `bgrd`, `opt`)
- subroutine `IXMrunfile::units_runfile` (`runfile`, `status`, `units_out`)
- subroutine `IXMrunfile::units_rebinXdesc_runfile` (`runfile`, `status`, `units_out`, `Xdesc`)

- subroutine IXMrunfile::units\_rebinXref\_runfile (runfile, status, units\_out, Xref)
- subroutine IXMrunfile::IXFrebin\_runfile (runfile, status, Xdesc, Xref)
- subroutine IXMrunfile::IXFbackground\_runfile (runfile, bmin, bmax, status)
- subroutine IXMrunfile::IXFcompare\_runfile (rfile1, rfile2, ident, status)
- subroutine IXMrunfile::IXFemap\_runfile (runfile, dso, status)
- subroutine IXMrunfile::IXFgetei\_runfile (runfile, Ei, status)
- subroutine IXMrunfile::IXFsolid\_runfile (rf, dso, wbrf, status)
- logical IXMrunfile::IXFwhitecompare\_runfile (sample, whitebeam)
- subroutine IXMrunfile::IXFmon\_norm\_runfile (rf, wk\_ind, limits, scale, status)
- subroutine IXMrunfile::IXFpeak\_norm\_runfile (rf, wk\_ind, ei, scale, status)
- subroutine IXMrunfile::IXFcharge\_norm\_runfile (rf, scale, status)
- subroutine IXMrunfile::IXFeffic\_norm\_runfile (rf, status)
- subroutine IXMrunfile::IXFpopulate\_runfile (runfile, status, dso, period, m\_units, m\_rebin, d\_units, d\_rebin, bgrd, opt)
- subroutine IXMrunfile::loadmonmap (mon\_map, dso, rawfile, status)
- subroutine IXMrunfile::loaddetmap (det\_map, dso, rawfile, status)
- subroutine IXMrunfile::loadmask (mask, dso, masktype, status)
- subroutine IXMrunfile::loadrawfile (rawfile, dso, status)
- subroutine IXMrunfile::loadheaderinfo\_isis (rfile, dso, inputsource, status)

## Variables

- integer(i4b), parameter IXMrunfile::IXCcomline\_initlength = 5

### 7.45.1 Define Documentation

7.45.1.1 #define IXD\_DESCRIPTION "IXTrunfile class"

7.45.1.2 #define IXD\_SQTYPE 'runfile'

7.45.1.3 #define IXD\_TYPE runfile

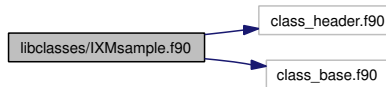
7.45.1.4 #define IXD\_TYPE runfile

## 7.46 libclasses/IXMsample.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMsample.f90:



### Namespaces

- namespace **IXMsample**

### Classes

- struct **IXMsample::IXTsample**

### Defines

- `#define IXD_TYPE sample`
- `#define IXD_DESCRIPTION "IXTsample class"`
- `#define IXD_TYPE sample`
- `#define IXD_SQTYPE 'sample'`

### Functions

- subroutine **IXMsample::IXFcheck\_sample** (sample, status)
- subroutine **IXMsample::IXFoperation\_run\_sample** (op, field, arg, status)
- subroutine **IXMsample::IXFcreate\_sample** (sample, name, chemical\_formula, temperature, electric\_field, electric\_coord, magnetic\_field, magnetic\_coord, pressure, lattice, uvec, vvec, psi, omega, gonio, shape, x\_geom, y\_geom, position, dimensions, radius, inner\_radius, height, mass, molecular\_weight, xcoh, xinc, xabs, status)
- subroutine **IXMsample::IXFset\_sample** (sample, status, name, chemical\_formula, temperature, electric\_field, electric\_coord, magnetic\_field, magnetic\_coord, pressure, lattice, uvec, vvec, psi, omega, gonio, shape, x\_geom, y\_geom, position, dimensions, radius, inner\_radius, height, mass, molecular\_weight, xcoh, xinc, xabs, ref)
- subroutine **IXMsample::IXFget\_sample** (sample, status, name, chemical\_formula, temperature, electric\_field, electric\_coord, magnetic\_field, magnetic\_coord, pressure, lattice, uvec, vvec, psi, omega, gonio, shape, x\_geom, y\_geom, position, dimensions, radius, inner\_radius, height, mass, molecular\_weight, xcoh, xinc, xabs, wout)
- subroutine **IXMsample::IXFdestroy\_sample** (sample, status)

### 7.46.1 Define Documentation

7.46.1.1 `#define IXD_DESCRIPTION "IXTsample class"`

7.46.1.2 `#define IXD_SQTYPE 'sample'`

7.46.1.3 `#define IXD_TYPE sample`

7.46.1.4 `#define IXD_TYPE sample`

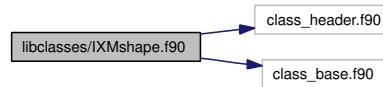


## 7.47 libclasses/IXMshape.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMshape.f90:



### Namespaces

- namespace `IXMshape`

### Classes

- struct `IXMshape::IXTshape`
- interface `IXMshape::IXFvolume`
- interface `IXMshape::IXFsolid_angle`

### Defines

- `#define IXD_TYPE shape`
- `#define IXD_NO_BASE 1`
- `#define IXD_DESCRIPTION "IXTshape class"`
- `#define IXD_TYPE shape`
- `#define IXD_SQTYPE 'shape'`

### Functions

- subroutine `IXMshape::IXFdestroy_shape (arg, status)`
- subroutine `IXMshape::IXFoperation_run_shape (op, field, arg, status)`
- subroutine `IXMshape::IXFset_shape (self, status, type, dimensions, ref)`
- subroutine `IXMshape::IXFget_shape (self, status, type, dimensions, wout)`
- subroutine `IXMshape::IXFget_ptr_shape (shape, dims_ptr)`
- subroutine `IXMshape::IXFget_alloc_shape (shape, dims_alloc)`
- subroutine `IXMshape::IXFcreate_shape (self, status, type, dimensions, shape)`
- subroutine `IXMshape::IXFcheck_shape (shape, status)`
- `real(dp) IXMshape::IXFvolume_shape (shape)`
- `real(dp) IXMshape::IXFsolid_angle_shape (shape, viewpoint)`
- `real(dp), dimension(:,:), pointer IXMshape::IXFarea_vertices_shape (shape, rotmat, vector)`
- subroutine `IXMshape::IXFprojarea_vertices_shape (shape, rotmat, vector, projection, px, py, status, radius, axes)`
- subroutine `IXMshape::IXFcheck_point (dimensions, status)`
- `real(dp) IXMshape::IXFvolume_point (dimensions)`
- `real(dp) IXMshape::IXFsolid_angle_point (dimensions, vp)`

- `real(dp)`, `dimension(:,:)`, pointer `IXMshape::IXFarea_vertices_point` (dims, rotmat, vector)
- subroutine `IXMshape::IXFcheck_box` (dimensions, status)
- `real(dp)` `IXMshape::IXFvolume_box` (dimensions)
- `real(dp)` `IXMshape::IXFsolid_angle_box` (dims, vp)
- `real(dp)`, `dimension(:,:)`, pointer `IXMshape::IXFarea_vertices_box` (dims, rotmat, vector)
- subroutine `IXMshape::IXFcheck_cylinder` (dimensions, status)
- `real(dp)` `IXMshape::IXFvolume_cylinder` (dimensions)
- `real(dp)` `IXMshape::IXFsolid_angle_cylinder` (dimensions, vp)
- `real(dp)`, `dimension(:,:)`, pointer `IXMshape::IXFarea_vertices_cylinder` (dims, rotmat, vector)
- subroutine `IXMshape::IXFcheck_sphere` (dimensions, status)
- `real(dp)` `IXMshape::IXFvolume_sphere` (dimensions)
- `real(dp)` `IXMshape::IXFsolid_angle_sphere` (dimensions, vp)
- `real(dp)`, `dimension(:,:)`, pointer `IXMshape::IXFarea_vertices_sphere` (dims, rotmat, vector)
- subroutine `IXMshape::IXFcheck_holcyl` (dimensions, status)
- `real(dp)` `IXMshape::IXFvolume_holcyl` (dimensions)
- `real(dp)` `IXMshape::IXFsolid_angle_holcyl` (dimensions, vp)
- `real(dp)`, `dimension(:,:)`, pointer `IXMshape::IXFarea_vertices_holcyl` (dims, rotmat, vector)
- subroutine `IXMshape::IXFcheck_polygon` (dimensions, status)
- `real(dp)` `IXMshape::IXFvolume_polygon` (dimensions)
- `real(dp)` `IXMshape::IXFsolid_angle_polygon` (dimensions, vp)
- `real(dp)`, `dimension(:,:)`, pointer `IXMshape::IXFarea_vertices_polygon` (dimensions, rotmat, vector)

## Variables

- `integer(i4b)`, parameter `IXMshape::IXCpoint = 0`
- `integer(i4b)`, parameter `IXMshape::IXCbox = 1`
- `integer(i4b)`, parameter `IXMshape::IXCylinder = 2`
- `integer(i4b)`, parameter `IXMshape::IXCsphere = 3`
- `integer(i4b)`, parameter `IXMshape::IXCholcyl = 4`
- `integer(i4b)`, parameter `IXMshape::IXCpolygon = 5`

### 7.47.1 Define Documentation

7.47.1.1 `#define IXD_DESCRIPTION "IXTshape class"`

7.47.1.2 `#define IXD_NO_BASE 1`

7.47.1.3 `#define IXD_SQTYPE 'shape'`

7.47.1.4 `#define IXD_TYPE shape`

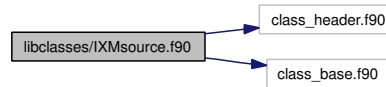
7.47.1.5 `#define IXD_TYPE shape`

## 7.48 libclasses/IXMsource.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMsource.f90:



### Namespaces

- namespace `IXMsource`

### Classes

- struct `IXMsource::IXTsource`

### Defines

- `#define IXD_TYPE source`
- `#define IXD_DESCRIPTION "IXTsource class"`
- `#define IXD_TYPE source`
- `#define IXD_SQTYPE 'source'`

### Functions

- subroutine `IXMsource::IXFdestroy_source (arg, status)`
- subroutine `IXMsource::IXFcheck_source (source, status)`
- subroutine `IXMsource::IXFoperation_run_source (op, field, arg, status)`
- subroutine `IXMsource::IXFcreate_source (source, facility_name, frequency, status)`
- subroutine `IXMsource::IXFset_source (source, status, facility_name, frequency, ref)`
- subroutine `IXMsource::IXFget_source (source, status, facility_name, frequency, wout)`

#### 7.48.1 Define Documentation

7.48.1.1 `#define IXD_DESCRIPTION "IXTsource class"`

7.48.1.2 `#define IXD_SQTYPE 'source'`

7.48.1.3 `#define IXD_TYPE source`

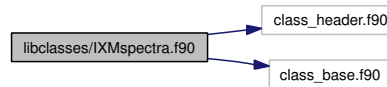
7.48.1.4 `#define IXD_TYPE source`

## 7.49 libclasses/IXMspectra.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMspectra.f90:



### Namespaces

- namespace `IXMspectra`

### Classes

- struct `IXMspectra::IXTspectra`
- interface `IXMspectra::IXFpopulate_spectra`

### Defines

- `#define IXD_TYPE spectra`
- `#define IXD_DESCRIPTION "IXTspectra class"`
- `#define IXD_TYPE spectra`
- `#define IXD_SQTYPE 'spectra'`

### Functions

- subroutine `IXMspectra::IXFoperation_run_spectra` (`op`, `field`, `arg`, `status`)
- subroutine `IXMspectra::IXFcreate_spectra` (`spectra`, `spec_no`, `spec_lookup`, `ndet`, `det_index`, `det_no`, `status`)
- subroutine `IXMspectra::IXFcheck_spectra` (`arg`, `status`)
- subroutine `IXMspectra::IXFdestroy_spectra` (`spectra`, `status`)
- subroutine `IXMspectra::IXFset_spectra` (`spectra`, `status`, `spec_lookup`, `spec_no`, `ndet`, `det_index`, `det_no`, `ref`)
- subroutine `IXMspectra::IXFget_spectra` (`spectra`, `status`, `spec_lookup`, `spec_no`, `ndet`, `det_index`, `det_no`, `wout`)
- subroutine `IXMspectra::IXFget_ptr_spectra` (`spectra`, `spec_lookup`, `spec_no`, `ndet`, `det_index`, `det_no`)
- subroutine `IXMspectra::IXFget_alloc_spectra` (`spectra`, `status`, `spec_lookup`, `spec_no`, `ndet`, `det_index`, `det_no`, `wout`)
- subroutine `IXMspectra::IXFgetdets_spectra` (`spectra`, `specs_in`, `dets_out`, `status`)
- subroutine `IXMspectra::populate_list_dso_isis` (`spectra`, `inputsource`, `spec_list`, `list_out`, `status`)
- logical `IXMspectra::IXFcompare_spectra` (`spec1`, `spec2`)
- logical `IXMspectra::IXFwhitecompare_spectra` (`sample`, `whitebeam`)

## 7.49.1 Define Documentation

7.49.1.1 `#define IXD_DESCRIPTION "IXTspectra class"`

7.49.1.2 `#define IXD_SQTYPE 'spectra'`

7.49.1.3 `#define IXD_TYPE spectra`

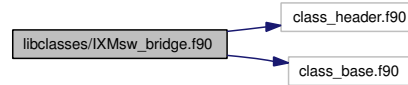
7.49.1.4 `#define IXD_TYPE spectra`

## 7.50 libclasses/IXMsw\_bridge.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMsw\_bridge.f90:



### Namespaces

- namespace `IXMsw_bridge`

### Classes

- struct `IXMsw_bridge::IXTsw_bridge`

### Defines

- `#define IXD_TYPE sw_bridge`
- `#define IXD_DESCRIPTION "IXTsw_bridge class"`
- `#define IXD_TYPE sw_bridge`
- `#define IXD_SQTYPE 'sw_bridge'`

### Functions

- subroutine `IXMsw_bridge::IXFoperation_run_sw_bridge` (op, field, arg, status)
- subroutine `IXMsw_bridge::IXFcreate_sw_bridge` (sw\_bridge, spec\_no, total\_work, work\_ind, work\_no, status)
- subroutine `IXMsw_bridge::IXFcheck_sw_bridge` (arg, status)
- subroutine `IXMsw_bridge::IXFdestroy_sw_bridge` (sw\_bridge, status)
- subroutine `IXMsw_bridge::IXFset_sw_bridge` (sw\_bridge, status, spec\_no, total\_work, work\_ind, work\_no, ref)
- subroutine `IXMsw_bridge::IXFget_sw_bridge` (sw\_bridge, status, spec\_no, total\_work, work\_ind, work\_no, wout)
- subroutine `IXMsw_bridge::IXFget_ptr_sw_bridge` (sw\_bridge, spec\_no, total\_work, work\_ind, work\_no)
- subroutine `IXMsw_bridge::IXFget_alloc_sw_bridge` (sw\_bridge, status, spec\_no, total\_work, work\_ind, work\_no, wout)
- subroutine `IXMsw_bridge::IXFpopulate_sw_bridge` (sw\_bridge, wk\_spec, specs, status)

## 7.50.1 Define Documentation

7.50.1.1 `#define IXD_DESCRIPTION "IXTsw_bridge class"`

7.50.1.2 `#define IXD_SQTYPE 'sw_bridge'`

7.50.1.3 `#define IXD_TYPE sw_bridge`

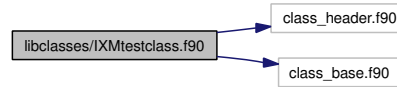
7.50.1.4 `#define IXD_TYPE sw_bridge`

## 7.51 libclasses/IXMtestclass.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMtestclass.f90:



### Namespaces

- namespace `IXMtestclass`

### Classes

- struct `IXMtestclass::IXTtestclass`
- interface `IXMtestclass::IXFcreate`

### Defines

- `#define IXD_TYPE testclass`
- `#define IXD_DESCRIPTION "IXTtestclass class"`
- `#define IXD_TYPE testclass`
- `#define IXD_SQTYPE 'testclass'`

### Functions

- subroutine `IXMtestclass::IXFoperation_run_testclass (op, field, arg, status)`
- subroutine `IXMtestclass::IXFCreate_testclass (arg, val, nx, val_array, err_array, val_stat, int_arr, spectra, xhist, label, status)`
- subroutine `IXMtestclass::IXFdestroy_testclass (arg, status)`
- subroutine `IXMtestclass::IXFCheck_Testclass (arg, status)`
- subroutine `IXMtestclass::IXFset_testclass (arg, status, val, nx, val_array, err_array, val_stat, int_arr, spectra, xhist, label, ref)`
- subroutine `IXMtestclass::IXFget_testclass (arg, status, val, nx, val_array, err_array, val_stat, int_arr, spectra, xhist, label, wout)`
- subroutine `IXMtestclass::IXFget_alloc_testclass (arg, status, val, nx, val_array, err_array, val_stat, int_arr, spectra, xhist, label, wout)`
- subroutine `IXMtestclass::IXFget_ptr_testclass (arg, val_array, err_array, int_arr, spectra)`
- subroutine `IXMtestclass::IXFcreate_special_testclass (arg, val_array, err_array, spectra, status)`
- subroutine `IXMtestclass::IXFPlus_testclass (wres, w1, w2, status)`
- subroutine `IXMtestclass::IXFtestfunc_testclass (w1, status)`



### 7.51.1 Define Documentation

7.51.1.1 `#define IXD_DESCRIPTION "IXTtestclass class"`

7.51.1.2 `#define IXD_SQTYPE 'testclass'`

7.51.1.3 `#define IXD_TYPE testclass`

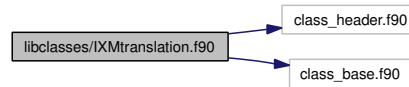
7.51.1.4 `#define IXD_TYPE testclass`

## 7.52 libclasses/IXMtranslation.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMtranslation.f90:



### Namespaces

- namespace `IXMtranslation`

### Classes

- struct `IXMtranslation::IXTtranslation`
- interface `IXMtranslation::operator`
- interface `IXMtranslation::operator`
- interface `IXMtranslation::IXFdot`
- interface `IXMtranslation::IXFnorm`
- interface `IXMtranslation::IXFcross`

### Defines

- `#define IXD_TYPE translation`
- `#define IXD_DESCRIPTION "IXTtranslation class"`
- `#define IXD_TYPE translation`
- `#define IXD_SQTYPE 'translation'`

### Functions

- subroutine `IXMtranslation::IXFdestroy_translation (arg, status)`
- subroutine `IXMtranslation::IXFoperation_run_translation (op, field, arg, status)`
- subroutine `IXMtranslation::IXFset_translation (self, status, vector, ref)`
- subroutine `IXMtranslation::IXFget_translation (self, status, vector, wout)`
- subroutine `IXMtranslation::IXFcreate_translation (self, status, vector)`
- subroutine `IXMtranslation::IXFcheck_translation (translation, status)`
- type(`IXTtranslation`) `IXMtranslation::IXFtt_plus_op_translation (t1, t2)`
- type(`IXTtranslation`) `IXMtranslation::IXFtv_plus_op_translation (t, v)`
- type(`IXTtranslation`) `IXMtranslation::IXFvt_plus_op_translation (v, t)`
- type(`IXTtranslation`) `IXMtranslation::IXFtt_minus_op_translation (t1, t2)`
- type(`IXTtranslation`) `IXMtranslation::IXFtv_minus_op_translation (t, v)`
- type(`IXTtranslation`) `IXMtranslation::IXFvt_minus_op_translation (v, t)`
- real(dp) `IXMtranslation::IXFnorm_translation (t)`
- real(dp) `IXMtranslation::IXFdot_translation (t1, t2)`

- `type(IXTtranslation) IXMtranslation::IXFcross_translation (t1, t2)`
- `type(IXTtranslation) IXMtranslation::IXFmatmul_translation (rotmat, t)`
- `real(dp), dimension(3) IXMtranslation::IXFs2sprime_translation (rotmat, t, v)`
- `real(dp), dimension(3) IXMtranslation::IXFsprime2s_translation (rotmat, t, vprime)`

### 7.52.1 Define Documentation

7.52.1.1 `#define IXD_DESCRIPTION "IXTtranslation class"`

7.52.1.2 `#define IXD_SQTYPE 'translation'`

7.52.1.3 `#define IXD_TYPE translation`

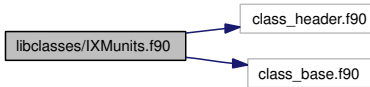
7.52.1.4 `#define IXD_TYPE translation`

## 7.53 libclasses/IXMunits.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMunits.f90:



### Namespaces

- namespace `IXMunits`

### Classes

- struct `IXMunits::IXTunits`

### Defines

- `#define IXD_TYPE units`
- `#define IXD_DESCRIPTION "IXTunits class"`
- `#define IXD_TYPE units`
- `#define IXD_SQTYPE 'units'`

### Functions

- subroutine `IXMunits::IXFoperation_run_units` (op, field, arg, status)
- logical `IXMunits::IXFcompare_units` (u1, u2)
- subroutine `IXMunits::IXFcreate_units` (arg, code, units, status)
- subroutine `IXMunits::IXFcreate_code_units` (arg, code, status)
- subroutine `IXMunits::IXFcreate_full_units` (arg, code, units, status)
- subroutine `IXMunits::IXFmake_label_units` (x\_unit, s\_unit, x\_dist, x\_label, s\_label, status)
- subroutine `IXMunits::IXFset_units` (arg, status, code, units, ref)
- subroutine `IXMunits::IXFget_units` (arg, status, code, units, wout)
- subroutine `IXMunits::IXFcheck_units` (units, status)
- subroutine `IXMunits::IXFdestroy_units` (units, status)

#### 7.53.1 Define Documentation

7.53.1.1 `#define IXD_DESCRIPTION "IXTunits class"`

7.53.1.2 `#define IXD_SQTYPE 'units'`

7.53.1.3 `#define IXD_TYPE units`

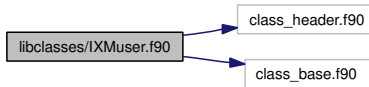
7.53.1.4 `#define IXD_TYPE units`

## 7.54 libclasses/IXMuser.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMuser.f90:



### Namespaces

- namespace `IXMuser`

### Classes

- struct `IXMuser::IXTuser`

### Defines

- `#define IXD_TYPE user`
- `#define IXD_DESCRIPTION "IXTuser class"`
- `#define IXD_TYPE user`
- `#define IXD_SQTYPE 'user'`

### Functions

- subroutine `IXMuser::IXFoperation_run_user` (op, field, arg, status)
- subroutine `IXMuser::IXFcreate_user` (user, name, affiliation, address, telephone, fax, email, status)
- subroutine `IXMuser::IXFset_user` (user, status, name, affiliation, address, telephone, fax, email, ref)
- subroutine `IXMuser::IXFget_user` (user, status, name, affiliation, address, telephone, fax, email, wout)
- subroutine `IXMuser::IXFcheck_user` (user, status)
- subroutine `IXMuser::IXFdestroy_user` (user, status)

#### 7.54.1 Define Documentation

7.54.1.1 `#define IXD_DESCRIPTION "IXTuser class"`

7.54.1.2 `#define IXD_SQTYPE 'user'`

7.54.1.3 `#define IXD_TYPE user`

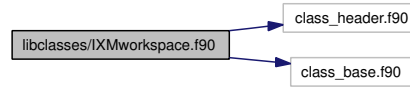
7.54.1.4 `#define IXD_TYPE user`

## 7.55 libclasses/IXMworkspace.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMworkspace.f90:



### Namespaces

- namespace `IXMworkspace`

### Classes

- struct `IXMworkspace::IXTworkspace`

### Defines

- `#define IXD_TYPE workspace`
- `#define IXD_DESCRIPTION "IXTworkspace class"`
- `#define IXD_TYPE workspace`
- `#define IXD_SQTYPE 'workspace'`

### Functions

- subroutine `IXMworkspace::IXFoperation_run_workspace` (`op`, `field`, `arg`, `status`)
- subroutine `IXMworkspace::IXFcreate_workspace` (`ws`, `work_no`, `effdet_index`, `status`)
- subroutine `IXMworkspace::IXFdestroy_workspace` (`ws`, `status`)
- subroutine `IXMworkspace::IXFset_workspace` (`ws`, `status`, `work_no`, `effdet_index`, `eff_det`, `ref`)
- subroutine `IXMworkspace::IXFcheck_workspace` (`ws`, `status`)
- subroutine `IXMworkspace::IXFget_workspace` (`ws`, `status`, `work_no`, `effdet_index`, `eff_det`, `wout`)
- subroutine `IXMworkspace::IXFget_ptr_workspace` (`ws`, `work_no`, `eff_det`, `effdet_index`)
- subroutine `IXMworkspace::IXFget_alloc_workspace` (`ws`, `status`, `work_no`, `effdet_index`, `eff_det`, `wout`)
- subroutine `IXMworkspace::IXFpopulate_workspace` (`workspace`, `wsbrg_ptr`, `spe_ptr`, `det_ptr`, `status`)

## 7.55.1 Define Documentation

7.55.1.1 `#define IXD_DESCRIPTION "IXTworkspace class"`

7.55.1.2 `#define IXD_SQTYPE 'workspace'`

7.55.1.3 `#define IXD_TYPE workspace`

7.55.1.4 `#define IXD_TYPE workspace`

## 7.56 libclasses/IXMwrappedvar.f90 File Reference

```
#include "wrappedvar_routines.f90"
```

Include dependency graph for IXMwrappedvar.f90:



### Namespaces

- namespace `IXMwrapped_var`

### Classes

- struct `IXMwrapped_var::base_object`
- struct `IXMwrapped_var::IXTwrapped_object`
- struct `IXMwrapped_var::IXTwrapped_var`
- interface `IXMwrapped_var::IXFwrap_var`
- interface `IXMwrapped_var::IXFwrap`
- interface `IXMwrapped_var::IXFunwrap_var`
- interface `IXMwrapped_var::IXFunwrap_varAlloc`
- interface `IXMwrapped_var::IXFunwrap_varPtr`

### Defines

- `#define IXD_NAME char1`
- `#define IXD_DIMS :`
- `#define IXD_TYPE character(len=*)`
- `#define IXD_NAME dp1`
- `#define IXD_DIMS :`
- `#define IXD_TYPE real(dp)`
- `#define IXD_NAME dp2`
- `#define IXD_DIMS :,:`
- `#define IXD_TYPE real(dp)`
- `#define IXD_NAME dp3`
- `#define IXD_DIMS :,,::`
- `#define IXD_TYPE real(dp)`
- `#define IXD_NAME dp4`
- `#define IXD_DIMS :,,:,::`
- `#define IXD_TYPE real(dp)`
- `#define IXD_NAME i1`
- `#define IXD_DIMS :`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_NAME i2`
- `#define IXD_DIMS :,:`
- `#define IXD_TYPE integer(i4b)`
- `#define IXD_NAME i3`
- `#define IXD_DIMS :,,::`



- `#define IXD_TYPE integer(i4b)`
- `#define IXD_NAME i4`
- `#define IXD_DIMS :,:,::`
- `#define IXD_TYPE integer(i4b)`

## Functions

- `integer(i4b) IXMwrapped_var::IXFwrap_type (wrapped_var)`
- `subroutine IXMwrapped_var::wrap_i (var, wrapped_var, status)`
- `type(IXTwrapped_var) IXMwrapped_var::f_wrap_i (var)`
- `subroutine IXMwrapped_var::wrap_dp (var, wrapped_var, status)`
- `type(IXTwrapped_var) IXMwrapped_var::f_wrap_dp (var)`
- `subroutine IXMwrapped_var::wrap_char (var, wrapped_var, status)`
- `type(IXTwrapped_var) IXMwrapped_var::f_wrap_char (var)`
- `subroutine IXMwrapped_var::wrap_logval (var, wrapped_var, status)`
- `type(IXTwrapped_var) IXMwrapped_var::f_wrap_logval (var)`
- `subroutine IXMwrapped_var::wrap_object (var, wrapped_var, status)`
- `type(IXTwrapped_var) IXMwrapped_var::f_wrap_object (var)`
- `subroutine IXMwrapped_var::unwrap_i (wrapped_var, var, status)`
- `subroutine IXMwrapped_var::unwrap_dp (wrapped_var, var, status)`
- `subroutine IXMwrapped_var::unwrap_char (wrapped_var, var, status)`
- `subroutine IXMwrapped_var::unwrap_logval (wrapped_var, var, status)`
- `subroutine IXMwrapped_var::unwrap_object (wrapped_var, var, status)`

## Variables

- `integer, parameter IXMwrapped_var::IXCvartype_unknown = 0`
- `integer, parameter IXMwrapped_var::IXCvartype_i = 1`
- `integer, parameter IXMwrapped_var::IXCvartype_i1 = 2`
- `integer, parameter IXMwrapped_var::IXCvartype_i2 = 3`
- `integer, parameter IXMwrapped_var::IXCvartype_i3 = 4`
- `integer, parameter IXMwrapped_var::IXCvartype_i4 = 5`
- `integer, parameter IXMwrapped_var::IXCvartype_dp = 6`
- `integer, parameter IXMwrapped_var::IXCvartype_dp1 = 7`
- `integer, parameter IXMwrapped_var::IXCvartype_dp2 = 8`
- `integer, parameter IXMwrapped_var::IXCvartype_dp3 = 9`
- `integer, parameter IXMwrapped_var::IXCvartype_dp4 = 10`
- `integer, parameter IXMwrapped_var::IXCvartype_char = 11`
- `integer, parameter IXMwrapped_var::IXCvartype_logical = 12`
- `integer, parameter IXMwrapped_var::IXCvartype_object = 13`
- `integer, parameter IXMwrapped_var::IXCvartype_char1 = 14`

## 7.56.1 Define Documentation

7.56.1.1 `#define IXD_DIMS ::,::,`

7.56.1.2 `#define IXD_DIMS ::,:`

7.56.1.3 `#define IXD_DIMS ::,`

7.56.1.4 `#define IXD_DIMS :`

7.56.1.5 `#define IXD_DIMS ::,::,`

7.56.1.6 `#define IXD_DIMS ::,:`

7.56.1.7 `#define IXD_DIMS ::,`

7.56.1.8 `#define IXD_DIMS :`

7.56.1.9 `#define IXD_DIMS :`

7.56.1.10 `#define IXD_NAME i4`

7.56.1.11 `#define IXD_NAME i3`

7.56.1.12 `#define IXD_NAME i2`

7.56.1.13 `#define IXD_NAME i1`

7.56.1.14 `#define IXD_NAME dp4`

7.56.1.15 `#define IXD_NAME dp3`

7.56.1.16 `#define IXD_NAME dp2`

7.56.1.17 `#define IXD_NAME dp1`

7.56.1.18 `#define IXD_NAME char1`

7.56.1.19 `#define IXD_TYPE integer(i4b)`

7.56.1.20 `#define IXD_TYPE integer(i4b)`

7.56.1.21 `#define IXD_TYPE integer(i4b)`

7.56.1.22 `#define IXD_TYPE integer(i4b)`

7.56.1.23 `#define IXD_TYPE real(dp)`

7.56.1.24 `#define IXD_TYPE real(dp)`

7.56.1.25 `#define IXD_TYPE real(dp)`

7.56.1.26 `#define IXD_TYPE real(dp)`

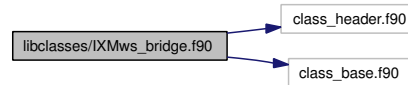
7.56.1.27 `#define IXD_TYPE character(len=*)`

## 7.57 libclasses/IXMws\_bridge.f90 File Reference

```
#include "class_header.f90"
```

```
#include "class_base.f90"
```

Include dependency graph for IXMws\_bridge.f90:



### Namespaces

- namespace IXMws\_bridge

### Classes

- struct IXMws\_bridge::IXTws\_bridge

### Defines

- #define IXD\_TYPE ws\_bridge
- #define IXD\_DESCRIPTION "IXTws\_bridge class"
- #define IXD\_TYPE ws\_bridge
- #define IXD\_SQTYPE 'ws\_bridge'

### Functions

- subroutine IXMws\_bridge::IXFoperation\_run\_ws\_bridge (op, field, arg, status)
- subroutine IXMws\_bridge::IXFcheck\_ws\_bridge (arg, status)
- subroutine IXMws\_bridge::IXFcreate\_ws\_bridge (ws\_bridge, work\_no, total\_spec, spec\_ind, bad\_spectra\_flag, spec\_no, status)
- subroutine IXMws\_bridge::IXFdestroy\_ws\_bridge (ws\_bridge, status)
- subroutine IXMws\_bridge::IXFset\_ws\_bridge (ws\_bridge, status, work\_no, total\_spec, spec\_ind, bad\_spectra\_flag, spec\_no, ref)
- subroutine IXMws\_bridge::IXFget\_ws\_bridge (ws\_bridge, status, work\_no, total\_spec, spec\_ind, bad\_spectra\_flag, spec\_no, wout)
- subroutine IXMws\_bridge::IXFget\_ptr\_ws\_bridge (ws\_bridge, work\_no, total\_spec, spec\_ind, bad\_spectra\_flag, spec\_no)
- subroutine IXMws\_bridge::IXFget\_alloc\_ws\_bridge (ws\_bridge, status, work\_no, total\_spec, spec\_ind, bad\_spectra\_flag, spec\_no, wout)
- subroutine IXMws\_bridge::IXFgetspecstotal\_ws\_bridge (ws, wk\_index, specs\_out)
- subroutine IXMws\_bridge::IXFgetspecsgood\_ws\_bridge (ws, wk\_index, specs\_out, ind\_out)
- subroutine IXMws\_bridge::IXFcheck\_subsid\_ws\_bridge (old\_ws, new\_ws, lookup)
- logical IXMws\_bridge::IXFcompare\_ws\_bridge (wsb1, wsb2)

## 7.57.1 Define Documentation

7.57.1.1 `#define IXD_DESCRIPTION "IXTws_bridge class"`

7.57.1.2 `#define IXD_SQTYPE 'ws_bridge'`

7.57.1.3 `#define IXD_TYPE ws_bridge`

7.57.1.4 `#define IXD_TYPE ws_bridge`

## 7.58 libclasses/NXmodule.f90 File Reference

### Namespaces

- namespace `NXmodule`

### Classes

- struct `NXmodule::NXhandle`
- struct `NXmodule::NXlink`
- interface `NXmodule::NXgetdata`
- interface `NXmodule::NXgetslab`
- interface `NXmodule::NXgetattr`
- interface `NXmodule::NXputdata`
- interface `NXmodule::NXputslab`
- interface `NXmodule::NXputattr`

### Functions

- INTEGER `NXmodule::NXopen` (`file_name`, `access_method`, `file_id`)
- INTEGER `NXmodule::NXclose` (`file_id`)
- INTEGER `NXmodule::NXflush` (`file_id`)
- INTEGER `NXmodule::NXmakegroup` (`file_id`, `group_name`, `group_class`)
- INTEGER `NXmodule::NXopengroup` (`file_id`, `group_name`, `group_class`)
- INTEGER `NXmodule::NXclosegroup` (`file_id`)
- function `NXmodule::NXmakedata` (`file_id`, `data_name`, `data_type`, `data_rank`, `data_dimensions`, `compress_type`, `chunk_size`)
- INTEGER `NXmodule::NXopendata` (`file_id`, `data_name`)
- INTEGER `NXmodule::NXcompress` (`file_id`, `compress_type`)
- INTEGER `NXmodule::NXclosedata` (`file_id`)
- INTEGER `NXmodule::NXgeti1` (`file_id`, `data`)
- INTEGER `NXmodule::NXgeti2` (`file_id`, `data`)
- INTEGER `NXmodule::NXgeti4` (`file_id`, `data`)
- INTEGER `NXmodule::NXgetr4` (`file_id`, `data`)
- INTEGER `NXmodule::NXgetr8` (`file_id`, `data`)
- INTEGER `NXmodule::NXgetchar` (`file_id`, `data`)
- INTEGER `NXmodule::NXgeti1slab` (`file_id`, `data`, `data_start`, `data_size`)
- INTEGER `NXmodule::NXgeti2slab` (`file_id`, `data`, `data_start`, `data_size`)
- INTEGER `NXmodule::NXgeti4slab` (`file_id`, `data`, `data_start`, `data_size`)
- INTEGER `NXmodule::NXgetr4slab` (`file_id`, `data`, `data_start`, `data_size`)
- INTEGER `NXmodule::NXgetr8slab` (`file_id`, `data`, `data_start`, `data_size`)
- function `NXmodule::NXgeti1attr` (`file_id`, `attr_name`, `value`, `attr_length`, `attr_type`)
- function `NXmodule::NXgeti2attr` (`file_id`, `attr_name`, `value`, `attr_length`, `attr_type`)
- function `NXmodule::NXgeti4attr` (`file_id`, `attr_name`, `value`, `attr_length`, `attr_type`)
- function `NXmodule::NXgetr4attr` (`file_id`, `attr_name`, `value`, `attr_length`, `attr_type`)

- function NXmodule::NXgetr8attr (file\_id, attr\_name, value, attr\_length, attr\_type)
- function NXmodule::NXgetcharattr (file\_id, attr\_name, value, attr\_length, attr\_type)
- INTEGER NXmodule::NXputi1 (file\_id, data)
- INTEGER NXmodule::NXputi2 (file\_id, data)
- INTEGER NXmodule::NXputi4 (file\_id, data)
- INTEGER NXmodule::NXputr4 (file\_id, data)
- INTEGER NXmodule::NXputr8 (file\_id, data)
- INTEGER NXmodule::NXputchar (file\_id, data)
- INTEGER NXmodule::NXputi1slab (file\_id, data, data\_start, data\_size)
- INTEGER NXmodule::NXputi2slab (file\_id, data, data\_start, data\_size)
- INTEGER NXmodule::NXputi4slab (file\_id, data, data\_start, data\_size)
- INTEGER NXmodule::NXputr4slab (file\_id, data, data\_start, data\_size)
- INTEGER NXmodule::NXputr8slab (file\_id, data, data\_start, data\_size)
- function NXmodule::NXputi1attr (file\_id, name, value, value\_length, value\_type)
- function NXmodule::NXputi2attr (file\_id, name, value, value\_length, value\_type)
- function NXmodule::NXputi4attr (file\_id, name, value, value\_length, value\_type)
- function NXmodule::NXputr4attr (file\_id, name, value, value\_length, value\_type)
- function NXmodule::NXputr8attr (file\_id, name, value, value\_length, value\_type)
- function NXmodule::NXputcharattr (file\_id, name, value, value\_length, value\_type)
- function NXmodule::NXgetinfo (file\_id, data\_rank, data\_dimensions, data\_type)
- INTEGER NXmodule::NXgetnextentry (file\_id, name, class, data\_type)
- function NXmodule::NXgetnextattr (file\_id, attr\_name, attr\_length, attr\_type)
- INTEGER NXmodule::NXgetgroupID (file\_id, group\_id)
- INTEGER NXmodule::NXgetdataID (file\_id, data\_id)
- LOGICAL NXmodule::NXsameID (file\_id, first\_id, second\_id)
- INTEGER NXmodule::NXmakelink (file\_id, link)
- function NXmodule::NXgetgroupinfo (file\_id, item\_number, group\_name, group\_class)
- INTEGER NXmodule::NXinitgroupdir (file\_id)
- function NXmodule::NXgroupdir (file\_id, item\_number, item\_name, item\_class)
- INTEGER NXmodule::NXgetattrinfo (file\_id, attr\_number)
- INTEGER NXmodule::NXinitattrdir (file\_id)
- INTEGER NXmodule::NXattrdir (file\_id, attr\_number, attr\_name)
- INTEGER, dimension(size(dimensions)) NXmodule::NXreverse (rank, dimensions)
- INTEGER(kind=NXi1), dimension(255) NXmodule::NXCstring (string)
- CHARACTER(len=255) NXmodule::NXFstring (array)
- CHARACTER(len=10) NXmodule::NXdatatype (int\_type)
- subroutine NXmodule::NXerror (message)

## Variables

- CHARACTER(len=\*), parameter NXmodule::NeXus\_version
- INTEGER, parameter NXmodule::NXACC\_READ = 1
- INTEGER, parameter NXmodule::NXACC\_RDWR = 2
- INTEGER, parameter NXmodule::NXACC\_CREATE = 3
- INTEGER, parameter NXmodule::NXACC\_CREATE4 = 4
- INTEGER, parameter NXmodule::NXACC\_CREATE5 = 5
- INTEGER, parameter NXmodule::NXACC\_CREATEXML = 6
- INTEGER, parameter NXmodule::NX\_OK = 1
- INTEGER, parameter NXmodule::NX\_ERROR = 0
- INTEGER, parameter NXmodule::NX\_EOD = -1
- INTEGER, parameter NXmodule::NX\_CHAR = 4
- INTEGER, parameter NXmodule::NX\_FLOAT32 = 5
- INTEGER, parameter NXmodule::NX\_FLOAT64 = 6
- INTEGER, parameter NXmodule::NX\_INT8 = 20
- INTEGER, parameter NXmodule::NX\_UINT8 = 21
- INTEGER, parameter NXmodule::NX\_INT16 = 22
- INTEGER, parameter NXmodule::NX\_UINT16 = 23
- INTEGER, parameter NXmodule::NX\_INT32 = 24
- INTEGER, parameter NXmodule::NX\_UINT32 = 25
- INTEGER, parameter NXmodule::NX\_COMP\_NONE = 100
- INTEGER, parameter NXmodule::NX\_COMP\_LZW = 200
- INTEGER, parameter NXmodule::NX\_COMP\_RLE = 300
- INTEGER, parameter NXmodule::NX\_COMP\_HUF = 400
- INTEGER, parameter NXmodule::NX\_UNLIMITED = -1
- INTEGER, parameter NXmodule::NX\_MAXRANK = 32
- INTEGER, parameter NXmodule::NX\_MAXNAMELEN = 64
- INTEGER, parameter NXmodule::NX\_MAXSTACK = 50
- INTEGER, parameter NXmodule::NXi1 = selected\_int\_kind(2)
- INTEGER, parameter NXmodule::NXi2 = selected\_int\_kind(4)
- INTEGER, parameter NXmodule::NXi4 = selected\_int\_kind(8)
- INTEGER, parameter NXmodule::NXr4 = kind(1.0)
- INTEGER, parameter NXmodule::NXr8 = kind(1.0D0)
- INTEGER(KIND=NXi1), dimension(:), allocatable NXmodule::buffer\_i1
- INTEGER(KIND=NXi2), dimension(:), allocatable NXmodule::buffer\_i2
- INTEGER(KIND=NXi4), dimension(:), allocatable NXmodule::buffer\_i4
- REAL(KIND=NXr4), dimension(:), allocatable NXmodule::buffer\_r4
- REAL(KIND=NXr8), dimension(:), allocatable NXmodule::buffer\_r8
- INTEGER NXmodule::NXrank
- INTEGER NXmodule::NXdims
- INTEGER NXmodule::NXtype
- INTEGER NXmodule::NXsize

## 7.59 libclasses/NXUmodule.f90 File Reference

### Namespaces

- namespace `NXUmodule`

### Classes

- interface `NXUmodule::NXUwritedata`
- interface `NXUmodule::NXUreaddata`
- struct `NXUmodule::data_type`

### Functions

- `INTEGER NXUmodule::NXUwriteglobals (file_id, user, affiliation, address, phone, fax, email)`
- `INTEGER NXUmodule::NXUwritegroup (file_id, group_name, group_class)`
- `INTEGER NXUmodule::NXUwritei4 (file_id, data_name, data, units)`
- `INTEGER NXUmodule::NXUwriter4 (file_id, data_name, data, units)`
- `INTEGER NXUmodule::NXUwriter8 (file_id, data_name, data, units)`
- `INTEGER NXUmodule::NXUwritechar (file_id, data_name, data, units)`
- `INTEGER NXUmodule::NXUwritei4array (file_id, data_name, data, units, data_start, data_size)`
- `INTEGER NXUmodule::NXUwriter4array (file_id, data_name, data, units, data_start, data_size)`
- `INTEGER NXUmodule::NXUwriter8array (file_id, data_name, data, units, data_start, data_size)`
- `INTEGER NXUmodule::NXUwrite2Di4array (file_id, data_name, data, units, data_start, data_size)`
- `INTEGER NXUmodule::NXUwrite2Dr4array (file_id, data_name, data, units, data_start, data_size)`
- `INTEGER NXUmodule::NXUwrite2Dr8array (file_id, data_name, data, units, data_start, data_size)`
- `INTEGER NXUmodule::NXUwrite3Di4array (file_id, data_name, data, units, data_start, data_size)`
- `INTEGER NXUmodule::NXUwrite3Dr4array (file_id, data_name, data, units, data_start, data_size)`
- `INTEGER NXUmodule::NXUwrite3Dr8array (file_id, data_name, data, units, data_start, data_size)`
- `INTEGER NXUmodule::NXUreadi4 (file_id, data_name, data, units)`
- `INTEGER NXUmodule::NXUreadr4 (file_id, data_name, data, units)`
- `INTEGER NXUmodule::NXUreadr8 (file_id, data_name, data, units)`
- `INTEGER NXUmodule::NXUreadchar (file_id, data_name, data, units)`
- `INTEGER NXUmodule::NXUreadi4array (file_id, data_name, data, units, data_start, data_size)`
- `INTEGER NXUmodule::NXUreadr4array (file_id, data_name, data, units, data_start, data_size)`
- `INTEGER NXUmodule::NXUreadr8array (file_id, data_name, data, units, data_start, data_size)`



- INTEGER NXUmodule::NXUread2Di4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUread2Dr4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUread2Dr8array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUread3Di4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUread3Dr4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUread3Dr8array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUread4Dr8array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUread4Dr4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUread4Di4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUwrite4Dr4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUwrite4Dr8array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUwrite4Di4array (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUwrite1Dcarray (file\_id, data\_name, data, units, data\_start, data\_size)
- INTEGER NXUmodule::NXUread1Dcarray (file\_id, data\_name, data, units, data\_start, data\_size)
- function NXUmodule::NXUsetcompress (file\_id, compress\_type, compress\_size)
- INTEGER NXUmodule::NXUfindgroup (file\_id, group\_name, group\_class)
- function NXUmodule::NXUfindclass (file\_id, group\_class, group\_name, find\_index)
- INTEGER NXUmodule::NXUfinddata (file\_id, data\_name)
- INTEGER NXUmodule::NXUfindattr (file\_id, attr\_name)
- INTEGER NXUmodule::NXUfindsignal (file\_id, signal, data\_name, data\_rank, data\_type, data\_dimensions)
- INTEGER NXUmodule::NXUfindaxis (file\_id, axis, primary, data\_name, data\_type, data\_dimensions)
- INTEGER NXUmodule::NXUfindlink (file\_id, group\_id, group\_class)
- INTEGER NXUmodule::NXUresumelink (file\_id, group\_id)
- INTEGER NXUmodule::NXUsearchgroup (file\_id, group\_id, data\_id, group\_class)
- INTEGER NXUmodule::NXUpreparedata (file\_id, data\_name, data\_type, data\_rank, data\_dimensions)

## Variables

- INTEGER NXUmodule::NXcompress\_type = NX\_COMP\_NONE
- INTEGER NXUmodule::NXcompress\_size = 1000
- INTEGER NXUmodule::group\_level

- `INTEGER NXUmodule::NXrank`
- `INTEGER NXUmodule::NXdims`
- `INTEGER NXUmodule::NXtype`
- `INTEGER NXUmodule::NXsize`
- `TYPE(NXhandle) NXUmodule::file_id`
- `CHARACTER(len=*) NXUmodule::data_name`
- `INTEGER NXUmodule::data_type`
- `INTEGER NXUmodule::data_rank`
- `INTEGER NXUmodule::data_dimensions`
- `INTEGER NXUmodule::status`

## 7.60 libcore/IXMarraymanips.f90 File Reference

```
#include "IXMarraymanips_routines.f90"
```

Include dependency graph for IXMarraymanips.f90:



### Namespaces

- namespace **IXMarraymanips**

### Classes

- interface **IXMarraymanips::IXFarrayCheck**
- interface **IXMarraymanips::IXFarrayPlus**
- interface **IXMarraymanips::IXFarrayTimes**
- interface **IXMarraymanips::IXFarrayMinus**
- interface **IXMarraymanips::IXFarrayDivide**
- interface **IXMarraymanips::IXFarrayPower**
- interface **IXMarraymanips::IXFarrayExp**
- interface **IXMarraymanips::IXFarrayLog**
- interface **IXMarraymanips::IXFarraySin**
- interface **IXMarraymanips::IXFarrayCos**
- interface **IXMarraymanips::IXFarrayTan**
- interface **IXMarraymanips::IXFarraySinh**
- interface **IXMarraymanips::IXFarrayCosh**
- interface **IXMarraymanips::IXFarrayTanh**
- interface **IXMarraymanips::IXFarrayPlusDA**
- interface **IXMarraymanips::IXFarrayPlusAD**
- interface **IXMarraymanips::IXFarrayTimesDA**
- interface **IXMarraymanips::IXFarrayTimesAD**
- interface **IXMarraymanips::IXFarrayMinusDA**
- interface **IXMarraymanips::IXFarrayMinusAD**
- interface **IXMarraymanips::IXFarrayDivideDA**
- interface **IXMarraymanips::IXFarrayDivideAD**

### Defines

- **#define IXD\_NAME 1D**
- **#define IXD\_DIMS :**
- **#define IXD\_NAME 2D**
- **#define IXD\_DIMS :,:**
- **#define IXD\_NAME 3D**
- **#define IXD\_DIMS :,::**
- **#define IXD\_NAME Plus**
- **#define IXD\_PM +**
- **#define IXD\_NAME Minus**

- `#define IXD_PM -`
- `#define IXD_NAME Times`
- `#define IXD_TD *`
- `#define IXD_NAME Divide`
- `#define IXD_TD /`

## Functions

- subroutine `IXMarraymanips::IXFcreatebinfac_D1` (s, e, x, mx\_u, mx\_l, binfacV\_D1, binfacE\_D1)
- subroutine `IXMarraymanips::IXFcreatePfac_D1` (s, e, x, mx\_u, mx\_l, PfacV\_D1, PfacE\_D1)
- subroutine `IXMarraymanips::IXFcreatebinfac_D2` (s, e, y, my\_u, my\_l, binfacV\_D2, binfacE\_D2)
- subroutine `IXMarraymanips::IXFcreatePfac_D2` (s, e, y, my\_u, my\_l, PfacV\_D2, PfacE\_D2)

### 7.60.1 Define Documentation

7.60.1.1 `#define IXD_DIMS :,,::`

7.60.1.2 `#define IXD_DIMS :,:`

7.60.1.3 `#define IXD_DIMS :`

7.60.1.4 `#define IXD_NAME Divide`

7.60.1.5 `#define IXD_NAME Times`

7.60.1.6 `#define IXD_NAME Minus`

7.60.1.7 `#define IXD_NAME Plus`

7.60.1.8 `#define IXD_NAME 3D`

7.60.1.9 `#define IXD_NAME 2D`

7.60.1.10 `#define IXD_NAME 1D`

7.60.1.11 `#define IXD_PM -`

7.60.1.12 `#define IXD_PM +`

7.60.1.13 `#define IXD_TD /`

7.60.1.14 `#define IXD_TD *`

## 7.61 libcore/IXMderivative.f90 File Reference

### Namespaces

- namespace **IXMderivative**

### Functions

- subroutine **IXMderivative::IXFderiv\_1\_1d** (*x*, *y*, *e*, *y1*, *e1*, *status*)
- subroutine **IXMderivative::IXFderiv\_2\_1d** (*x*, *y*, *e*, *y2*, *e2*, *status*)

## 7.62 libcore/IXMefficiency.f90 File Reference

### Namespaces

- namespace `IXMefficiency`

### Functions

- `real(dp) IXMefficiency::EFF (En, atms)`
- `real(dp) IXMefficiency::EFFCHB (a, b, c, m, x)`

## 7.63 libcore/IXMerrorcodes.f90 File Reference

### Namespaces

- namespace `IXMerrorcodes`

### Variables

- integer, parameter `IXMerrorcodes::IXCfacility_none = 1`
- integer, parameter `IXMerrorcodes::IXCfacility_libisis = 2`
- integer, parameter `IXMerrorcodes::IXCfacility_bindings = 3`
- integer, parameter `IXMerrorcodes::IXCfacility_memory = 4`
- integer, parameter `IXMerrorcodes::IXCfacility_wrapvar = 5`
- integer, parameter `IXMerrorcodes::IXCfacility_file = 6`
- integer, parameter `IXMerrorcodes::IXCfacility_max_name_len = 20`
- character(len=`IXCfacility_max_name_len`), parameter `IXMerrorcodes::IXCfacility_names = (/ 'NONE ', 'LIBISIS ', 'BINDINGS', 'MEMORY ', 'WRAPVAR ', 'FILE ' /)`
- integer, parameter `IXMerrorcodes::IXCerr_unknown = 1`
- integer, parameter `IXMerrorcodes::IXCerr_outofmem = 2`
- integer, parameter `IXMerrorcodes::IXCerr_invparam = 3`
- integer, parameter `IXMerrorcodes::IXCerr_filenotfound = 4`
- integer, parameter `IXMerrorcodes::IXCerr_max_name_len = 30`
- character(len=`IXCerr_max_name_len`), parameter `IXMerrorcodes::IXCerr_names = (/ 'Unknown ', 'Out of Memory ', 'Invalid Argument/Parameter', 'File Not Found ' /)`

## 7.64 libcore/IXMindex.f90 File Reference

### Namespaces

- namespace `IXMindex`

### Classes

- interface `IXMindex::IXFlower_index`
- interface `IXMindex::IXFupper_index`

### Functions

- `integer(i4b) IXMindex::lower_index_dp (arr, val)`
- `integer(i4b) IXMindex::lower_index_sp (arr, val)`
- `integer(i4b) IXMindex::lower_index_i4b (arr, val)`
- `integer(i4b) IXMindex::upper_index_dp (arr, val)`
- `integer(i4b) IXMindex::upper_index_sp (arr, val)`
- `integer(i4b) IXMindex::upper_index_i4b (arr, val)`



## 7.65 libcore/IXMintegrate.f90 File Reference

### Namespaces

- namespace `IXMintegrate`

### Functions

- subroutine `IXMintegrate::IXFintegrate_1d_hist` (`val`, `err`, `x`, `s`, `e`, `xdist`, `xmin_in`, `xmax_in`, `status`)
- subroutine `IXMintegrate::IXFintegrate_1d_points` (`val`, `err`, `x`, `s`, `e`, `xmin_in`, `xmax_in`, `status`)
- subroutine `IXMintegrate::IXFintegrate_2d_hist` (`s`, `e`, `status`, `x`, `xdist`, `xhist`, `xmin_in`, `xmax_in`, `val_pt`, `err_pt`, `ymin_in`, `ymax_in`, `y`, `ydist`, `yhist`, `val_ar_in`, `err_ar_in`, `x_ar`, `spec_lo`, `spec_hi`)

## 7.66 libcore/IXMio.f90 File Reference

### Namespaces

- namespace **IXMio**

### Functions

- subroutine **IXMio::IXFwrite\_line** (*line*, *status*)
- subroutine **IXMio::IXFwrite\_line\_indent** (*line*, *indent*, *ch*, *status*)
- subroutine **IXIwrite\_line** (*line*, *status*)

### 7.66.1 Function Documentation

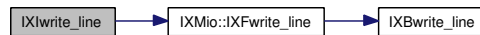
#### 7.66.1.1 subroutine **IXIwrite\_line** (*character(len=\*) line*, *type(IXTstatus) status*)

Definition at line 64 of file IXMio.f90.

References **IXMio::IXFwrite\_line()**, and **NXUmodule::status**.

Referenced by **IXMstatus::report\_local\_status()**.

Here is the call graph for this function:



## 7.67 libcore/IXMlibcore.f90 File Reference

### Namespaces

- namespace **IXMlibcore**

### Functions

- integer **IXMlibcore::IXFlibrary\_init** ()  
*initialise the library*
- subroutine **IXMlibcore::IXFlibrary\_finish** (status)

### Variables

- integer, parameter **IXMlibcore::IXCmemory\_stack\_size** = 5000

## 7.68 libcore/IXMmaths\_basis.f90 File Reference

### Namespaces

- namespace `IXMmaths_basis`

### Classes

- interface `IXMmaths_basis::IXFnorm`
- interface `IXMmaths_basis::IXFdot`
- interface `IXMmaths_basis::IXFcos`
- interface `IXMmaths_basis::IXFcross`

### Functions

- `real(dp) IXMmaths_basis::IXFnorm (v)`
- `real(dp) IXMmaths_basis::IXFdot (v1, v2)`
- `real(dp) IXMmaths_basis::IXFcos (v1, v2)`
- `real(dp), dimension(3) IXMmaths_basis::IXFcross (v1, v2)`
- `real(dp), dimension(3, 3) IXMmaths_basis::IXFrotvec_to_rotmat (theta)`
- `real(dp), dimension(3) IXMmaths_basis::IXFrotmat_to_rotvec (r)`
- `logical IXMmaths_basis::IXFrotmat_orthogonal (r)`

## 7.69 libcore/IXMmaths\_geometry.f90 File Reference

### Namespaces

- namespace `IXMmaths_geometry`

### Functions

- subroutine `IXMmaths_geometry::IXFpolygon_moments` (`x`, `y`, `status`, `area`, `centroid`)

## 7.70 libcore/IXMmaths\_projection.f90 File Reference

### Namespaces

- namespace `IXMmaths_projection`

### Functions

- subroutine `IXMmaths_projection::IXFproj_projection` (vertices, projection, px, py, status, radius, axes)

### Variables

- integer(i4b), parameter `IXMmaths_projection::IXCspherical_polar = 1`
- integer(i4b), parameter `IXMmaths_projection::IXCcylindrical_polar = 2`
- integer(i4b), parameter `IXMmaths_projection::IXCpolar = 3`
- integer(i4b), parameter `IXMmaths_projection::IXCplanar = 4`

## 7.71 libcore/IXMmaths\_utils.f90 File Reference

### Namespaces

- namespace `IXMmaths_utils`

### Functions

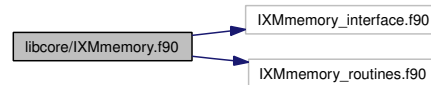
- subroutine `IXMmaths_utils::IXFunit_matrix (mat)`

## 7.72 libcore/IXMmemory.f90 File Reference

```
#include "IXMmemory_interface.f90"
```

```
#include "IXMmemory_routines.f90"
```

Include dependency graph for IXMmemory.f90:



### Namespaces

- namespace `IXMmemory`

### Classes

- struct `IXMmemory::IXTmemory_info`

### Defines

- `#define IXD_NAME dp1`
- `#define IXD_FTYPE_FIXED real(dp)`
- `#define IXD_FTYPE real(dp)`
- `#define IXD_DIMS :`
- `#define IXD_NAME dp2`
- `#define IXD_FTYPE_FIXED real(dp)`
- `#define IXD_FTYPE real(dp)`
- `#define IXD_DIMS :,:`
- `#define IXD_NAME dp3`
- `#define IXD_FTYPE_FIXED real(dp)`
- `#define IXD_FTYPE real(dp)`
- `#define IXD_DIMS :,,::`
- `#define IXD_NAME dp4`
- `#define IXD_FTYPE_FIXED real(dp)`
- `#define IXD_FTYPE real(dp)`
- `#define IXD_DIMS :,,:,::`
- `#define IXD_NAME i1`
- `#define IXD_FTYPE_FIXED integer(i4b)`
- `#define IXD_FTYPE integer(i4b)`
- `#define IXD_DIMS :`
- `#define IXD_NAME i2`
- `#define IXD_FTYPE_FIXED integer(i4b)`
- `#define IXD_FTYPE integer(i4b)`
- `#define IXD_DIMS :,:`
- `#define IXD_NAME i3`
- `#define IXD_FTYPE_FIXED integer(i4b)`
- `#define IXD_FTYPE integer(i4b)`



- #define IXD\_DIMS :,,::
- #define IXD\_NAME i4
- #define IXD\_FTYPE\_FIXED integer(i4b)
- #define IXD\_FTYPE integer(i4b)
- #define IXD\_DIMS :,,::
- #define IXD\_NAME c1
- #define IXD\_FTYPE\_FIXED character(len=long\_len)
- #define IXD\_FTYPE character(len=\*)
- #define IXD\_DIMS :
- #define IXD\_NAME dp1
- #define IXD\_FTYPE real(dp)
- #define IXD\_FTYPE\_TEMP real(dp)
- #define IXD\_MTYPE 'double'
- #define IXD\_DIMS :
- #define IXD\_STACK stackdp1
- #define IXD\_NDIMS 1
- #define IXD\_NULL IXCundef\_dp
- #define IXD\_NAME dp2
- #define IXD\_FTYPE real(dp)
- #define IXD\_FTYPE\_TEMP real(dp)
- #define IXD\_MTYPE 'double'
- #define IXD\_DIMS :,:
- #define IXD\_STACK stackdp2
- #define IXD\_NDIMS 2
- #define IXD\_NULL IXCundef\_dp
- #define IXD\_NAME dp3
- #define IXD\_FTYPE real(dp)
- #define IXD\_FTYPE\_TEMP real(dp)
- #define IXD\_MTYPE 'double'
- #define IXD\_DIMS :,,::
- #define IXD\_STACK stackdp3
- #define IXD\_NDIMS 3
- #define IXD\_NULL IXCundef\_dp
- #define IXD\_NAME dp4
- #define IXD\_FTYPE real(dp)
- #define IXD\_FTYPE\_TEMP real(dp)
- #define IXD\_MTYPE 'double'
- #define IXD\_DIMS :,,::
- #define IXD\_STACK stackdp4
- #define IXD\_NDIMS 4
- #define IXD\_NULL IXCundef\_dp
- #define IXD\_NAME i1
- #define IXD\_FTYPE integer(i4b)
- #define IXD\_FTYPE\_TEMP integer(i4b)
- #define IXD\_MTYPE 'int32'
- #define IXD\_DIMS :
- #define IXD\_STACK stacki1
- #define IXD\_NDIMS 1
- #define IXD\_NULL IXCundef\_i4b
- #define IXD\_NAME i2

- `#define IXD_FTYPE integer(i4b)`
- `#define IXD_FTYPE_TEMP integer(i4b)`
- `#define IXD_MTYPE 'int32'`
- `#define IXD_DIMS :,:`
- `#define IXD_STACK stacki2`
- `#define IXD_NDIMS 2`
- `#define IXD_NULL IXCundef_i4b`
- `#define IXD_NAME i3`
- `#define IXD_FTYPE integer(i4b)`
- `#define IXD_FTYPE_TEMP integer(i4b)`
- `#define IXD_MTYPE 'int32'`
- `#define IXD_DIMS :,,::`
- `#define IXD_STACK stacki3`
- `#define IXD_NDIMS 3`
- `#define IXD_NULL IXCundef_i4b`
- `#define IXD_NAME i4`
- `#define IXD_FTYPE integer(i4b)`
- `#define IXD_FTYPE_TEMP integer(i4b)`
- `#define IXD_MTYPE 'int32'`
- `#define IXD_DIMS :,,:,::`
- `#define IXD_STACK stacki4`
- `#define IXD_NDIMS 4`
- `#define IXD_NULL IXCundef_i4b`
- `#define IXD_NAME c1`
- `#define IXD_FTYPE character(len=*)`
- `#define IXD_FTYPE_TEMP character(len=len(array))`
- `#define IXD_MTYPE 'char'`
- `#define IXD_DIMS :`
- `#define IXD_STACK stackc1`
- `#define IXD_NDIMS 1`
- `#define IXD_NULL 'NaN'`

## Functions

- subroutine `IXMmemory::IXFmemory_init` (size)
- subroutine `IXMmemory::IXFmemory_cleanup` (status)
- subroutine `IXMmemory::associate_integer4` (ptr, value)
- subroutine `IXMmemory::associate_real8` (ptr, value)

## Variables

- integer, parameter `IXMmemory::IXCmemory_buckets = 9973`
- integer(cpointer\_t), external `IXMmemory::IXBexternalMakeResult`
- integer(cpointer\_t), external `IXMmemory::IXBallocArrayDescriptor`
- integer(cpointer\_t), external `IXMmemory::IXBgetArraydata`

## 7.72.1 Define Documentation

7.72.1.1 `#define IXD_DIMS :`

7.72.1.2 `#define IXD_DIMS ::,,: :`

7.72.1.3 `#define IXD_DIMS ::,,: :`

7.72.1.4 `#define IXD_DIMS ::,,: :`

7.72.1.5 `#define IXD_DIMS :`

7.72.1.6 `#define IXD_DIMS ::,,: :`

7.72.1.7 `#define IXD_DIMS ::,,: :`

7.72.1.8 `#define IXD_DIMS ::,,: :`

7.72.1.9 `#define IXD_DIMS :`

7.72.1.10 `#define IXD_DIMS :`

7.72.1.11 `#define IXD_DIMS ::,,: :`

7.72.1.12 `#define IXD_DIMS ::,,: :`

7.72.1.13 `#define IXD_DIMS ::,,: :`

7.72.1.14 `#define IXD_DIMS :`

7.72.1.15 `#define IXD_DIMS ::,,: :`

7.72.1.16 `#define IXD_DIMS ::,,: :`

7.72.1.17 `#define IXD_DIMS ::,,: :`

7.72.1.18 `#define IXD_DIMS :`

7.72.1.19 `#define IXD_FTYPE character(len=*)`

7.72.1.20 `#define IXD_FTYPE integer(i4b)`

7.72.1.21 `#define IXD_FTYPE integer(i4b)`

7.72.1.22 `#define IXD_FTYPE integer(i4b)`

7.72.1.23 `#define IXD_FTYPE integer(i4b)`

7.72.1.24 `#define IXD_FTYPE real(dp)`

7.72.1.25 `#define IXD_FTYPE real(dp)`

7.72.1.26 `#define IXD_FTYPE real(dp)`

7.72.1.27 `#define IXD_FTYPE real(dp)`

---

Generated on Mon Feb 19 18:32:25 2007 for LIBISIS by Doxygen

7.72.1.28 `#define IXD_FTYPE character(len=*)`

7.72.1.29 `#define IXD_FTYPE integer(i4b)`

7.72.1.30 `#define IXD_FTYPE integer(i4b)`

## 7.73 libcore/IXMmoments\_utils.f90 File Reference

### Namespaces

- namespace `IXMmoments_utils`

### Functions

- subroutine `IXMmoments_utils::get_moments` (`x`, `y`, `e`, `x_min`, `x_max`, `prominence`, `status`, `&area`, `bkgd`, `c`, `c_fwhm`, `h`, `w`, `xbar`, `sig`, `gam1`, `gam2`, `sig_xbar`, `sig_sig`, `sig_gam1`, `sig_gam2`, `pk_min`, `pk_max`, `bkgd_min`, `bkgd_max`)

## 7.74 libcore/IXMneutron\_constants.f90 File Reference

### Namespaces

- namespace IXMneutron\_constants

### Variables

- real(dp), parameter IXMneutron\_constants::c\_t\_to\_k = 1.0e3\_dp\*neutron\_mass\_mantissa/hbar\_mantissa
- real(dp), parameter IXMneutron\_constants::c\_t\_to\_lam = twopi\_dp/c\_t\_to\_k
- real(dp), parameter IXMneutron\_constants::c\_t\_to\_emev = 0.5e7\_dp\*neutron\_mass\_mantissa/electron\_charge\_mantissa
- real(dp), parameter IXMneutron\_constants::c\_t\_to\_ewav = 0.5e9\_dp\*neutron\_mass\_mantissa/(twopi\_dp\*hbar\_mantissa\*speed\_of\_light\_mantissa)
- real(dp), parameter IXMneutron\_constants::c\_t\_to\_ethz = 0.5e7\_dp\*neutron\_mass\_mantissa/(twopi\_dp\*hbar\_mantissa)
- real(dp), parameter IXMneutron\_constants::c\_t\_to\_q = 2.0\_dp\*c\_t\_to\_k
- real(dp), parameter IXMneutron\_constants::c\_t\_to\_sq = c\_t\_to\_q\*\*2
- real(dp), parameter IXMneutron\_constants::c\_t\_to\_d = twopi\_dp/c\_t\_to\_q
- real(dp), parameter IXMneutron\_constants::c\_emev\_to\_ewav = 100.0\_dp\*electron\_charge\_mantissa/(twopi\_dp\*hbar\_mantissa\*speed\_of\_light\_mantissa)
- real(dp), parameter IXMneutron\_constants::c\_emev\_to\_ethz = electron\_charge\_mantissa/(twopi\_dp\*hbar\_mantissa)
- real(dp), parameter IXMneutron\_constants::c\_v\_to\_emev = 5.0e-6\_dp\*neutron\_mass\_mantissa/electron\_charge\_mantissa
- real(dp), parameter IXMneutron\_constants::c\_k\_to\_emev = 5.0\_dp\*hbar\_mantissa\*hbar\_mantissa/(neutron\_mass\_mantissa\*electron\_charge\_mantissa)

## 7.75 libcore/IXMneutron\_units.f90 File Reference

### Namespaces

- namespace IXMneutron\_units

### Variables

- integer(i4b), parameter IXMneutron\_units::n\_0 = 9
- integer(i4b), parameter IXMneutron\_units::n\_1 = 20
- integer(i4b), parameter IXMneutron\_units::n\_2 = 20
- character(len=4), parameter IXMneutron\_units::IXCcode\_t = 't '
- character(len=4), parameter IXMneutron\_units::IXCcode\_v = 'v '
- character(len=4), parameter IXMneutron\_units::IXCcode\_tau = 'tau '
- character(len=4), dimension(len=4), parameter IXMneutron\_units::character
- character(len=4), parameter IXMneutron\_units::parameter
- character(len=4), parameter IXMneutron\_units::IXCcode\_v2 = 'v2 '
- character(len=4), parameter IXMneutron\_units::IXCcode\_tau2 = 'tau2'
- character(len=4), parameter IXMneutron\_units::IXCcode\_lam2 = 'lam2'
- character(len=4), parameter IXMneutron\_units::IXCcode\_k2 = 'k2 '
- character(len=4), parameter IXMneutron\_units::IXCcode\_e2 = 'e2 '
- character(len=4), parameter IXMneutron\_units::IXCcode\_v1 = 'v1 '
- character(len=4), parameter IXMneutron\_units::IXCcode\_tau1 = 'tau1'
- character(len=4), parameter IXMneutron\_units::IXCcode\_lam1 = 'lam1'
- character(len=4), parameter IXMneutron\_units::IXCcode\_k1 = 'k1 '
- character(len=4), parameter IXMneutron\_units::IXCcode\_e1 = 'e1 '
- character(len=4), parameter IXMneutron\_units::IXCcode\_w = 'w '
- character(len=4), parameter IXMneutron\_units::IXCcode\_wn = 'wn '
- character(len=4), parameter IXMneutron\_units::IXCcode\_thz = 'thz '
- character(len=4), parameter IXMneutron\_units::IXCcode\_q = 'q '
- character(len=4), parameter IXMneutron\_units::IXCcode\_qplus = 'q+ '
- character(len=4), parameter IXMneutron\_units::IXCcode\_qminus = 'q- '
- character(len=long\_len), parameter IXMneutron\_units::IXCunit\_microsecond = 'Microsecond'
- integer(i4b), parameter IXMneutron\_units::list\_len = 26
- character(len=4), dimension(list\_len), parameter IXMneutron\_units::code\_list = (/ 't ', 'v ', 'tau ', 'lam ', 'k ', 'e ', 'd ', character(len=long\_len), parameter::units\_list(list\_len) = (/ 'Microsecond', 'm/s ', 's/m ', 'Angstrom ', 'Angstrom^-1', 'meV ', 'Angstrom ', 'm/s ', 's/m ', 'Angstrom ', 'Angstrom^-1', 'meV ', 'm/s ', 's/m ', 'Angstrom ', 'Angstrom^-1', 'meV ', 'meV ', 'cm^-1 ', 'THz ', 'Angstrom^-1', 'Angstrom^-1', 'Angstrom^-1', 'Angstrom^2 ', 'Angstrom^2 ', 'Angstrom^2 ' /) )
- character(len=long\_len), dimension(list\_len), parameter IXMneutron\_units::cap\_list = (/ 'time-of-flight ', 'neutron speed ', 'neutron inverse speed ', 'wavelength ', 'wavevector ', 'Energy ', 'd-spacing ', 'final neutron speed ', 'final neutron inverse speed', 'final wavelength ', 'final wavevector ', 'final energy ', 'final neutron speed ', 'final neutron inverse speed', 'final wavelength ', 'final wavevector ', 'incident energy ', 'energy transfer ', 'energy transfer ', 'energy transfer ', 'momentum transfer ', 'momentum transfer ', 'momentum transfer ', 'square of momentum transfer', 'square of momentum transfer', 'square of momentum transfer' /)

- character(len=4), parameter IXMneutron\_units::IXCspecnoC = 'spno'
- character(len=4), parameter IXMneutron\_units::IXCworknoC = 'wkno'
- character(len=4), parameter IXMneutron\_units::IXCcountsC = 'cts '
- character(len=long\_len), parameter IXMneutron\_units::IXCcountsU = 'Counts'
- character(len=long\_len), parameter IXMneutron\_units::IXCspecnoU = 'Spectrum Number'
- character(len=long\_len), parameter IXMneutron\_units::IXCworknoU = 'Workspace Number'
- character(len=4), parameter IXMneutron\_units::IXCnullcode = 'null'
- character(len=long\_len), parameter IXMneutron\_units::IXCnullunits = 'Null Units'
- character(len=4), dimension(n\_0), parameter IXMneutron\_units::u\_0 = (/ 't', 'v', 'tau', 'lam', 'k', 'e', 'd', 'q', 'sq' /)
- real(dp), dimension(n\_0), parameter IXMneutron\_units::a\_0 = (/ 0, 1,-1,-1, 1, 2,-1, 1, 2 /)
- real(dp), dimension(n\_0), parameter IXMneutron\_units::b\_0 = (/ 0, 0, 0, 0, 0, 0,-1, 1, 2 /)
- real(dp), dimension(n\_0), parameter IXMneutron\_units::g\_0 = (/ 1,-1, 1, 1,-1,-2, 1,-1,-2 /)
- real(dp), dimension(n\_0), parameter IXMneutron\_units::c\_0 = (/ 1.0\_dp, 1.0e6\_dp, 1.0e-6\_dp, c\_t\_to\_lam, c\_t\_to\_k, integer(i4b),parameter:: qopt\_0(n\_0)= (/ 0, 0, 0, 0, 0, 0, 0, 0 /)
- character(len=4), dimension(n\_1), parameter IXMneutron\_units::u\_1 = (/ 't', 'v', 'tau', 'lam', 'k', 'e', 'v2', real(dp),parameter:: a\_1(n\_1)= (/ 0, 1,-1,-1, 1, 2, 1,-1,-1, 1, 2, 2, 2, 2, 0, 0, 0, 0, 0, 0 /)
- real(dp), dimension(n\_1), parameter IXMneutron\_units::b\_1 = (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 /)
- real(dp), dimension(n\_1), parameter IXMneutron\_units::g\_1 = (/ 1,-1, 1, 1,-1,-2,-1, 1, 1,-1,-2,-2,-2,-2, 0, 0, 0, 0, 0, 0 /)
- real(dp), dimension(n\_1) IXMneutron\_units::c\_1
- integer(i4b), dimension(n\_1), parameter IXMneutron\_units::qopt\_1 = (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, -1, 2, 2, -2 /)
- character(len=4), dimension(n\_2), parameter IXMneutron\_units::u\_2 = (/ 't', 'v', 'tau', 'lam', 'k', 'e', 'v1', real(dp),parameter:: a\_2(n\_2)= (/ 0, 1,-1,-1, 1, 2, 1,-1,-1, 1, 2, 2, 2, 2, 0, 0, 0, 0, 0, 0 /)
- real(dp), dimension(n\_2), parameter IXMneutron\_units::b\_2 = (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 /)
- real(dp), dimension(n\_2), parameter IXMneutron\_units::g\_2 = (/ 1,-1, 1, 1,-1,-2,-1, 1, 1,-1,-2,-2,-2,-2, 0, 0, 0, 0, 0, 0 /)
- real(dp), dimension(n\_2) IXMneutron\_units::c\_2
- integer(i4b), dimension(n\_2), parameter IXMneutron\_units::qopt\_2 = (/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, -1, 2, 2, -2 /)

## 7.76 libcore/IXMphysical\_constants.f90 File Reference

### Namespaces

- namespace IXMphysical\_constants

### Variables

- real(dp), parameter IXMphysical\_constants::neutron\_mass = 1.67492716e-27\_dp
- real(dp), parameter IXMphysical\_constants::neutron\_mass\_mantissa = 1.67492716\_dp
- real(dp), parameter IXMphysical\_constants::hbar = 1.054571596e-34\_dp
- real(dp), parameter IXMphysical\_constants::hbar\_mantissa = 1.054571596\_dp
- real(dp), parameter IXMphysical\_constants::electron\_charge = 1.602176462e-19\_dp
- real(dp), parameter IXMphysical\_constants::electron\_charge\_mantissa = 1.602176462\_dp
- real(dp), parameter IXMphysical\_constants::speed\_of\_light = 2.99792458e8\_dp
- real(dp), parameter IXMphysical\_constants::speed\_of\_light\_mantissa = 2.99792458\_dp



## 7.77 libcore/IXMpointer\_to\_array.f90 File Reference

### Namespaces

- namespace `IXMpointer_to_array`

### Classes

- struct `IXMpointer_to_array::IXTpointer_to_array`

## 7.78 libcore/IXMrebin.f90 File Reference

### Namespaces

- namespace `IXMrebin`

### Functions

- subroutine `IXMrebin::IXFrebin_1d_hist` (`xin`, `s_in`, `ein`, `xout`, `s_out`, `eout`, `xdist`, `status`)
- subroutine `IXMrebin::IXFrebinX_2d_hist` (`x_in`, `s_in`, `e_in`, `x_out`, `s_out`, `e_out`, `xdist`, `status`)
- subroutine `IXMrebin::IXFrebinY_2d_hist` (`yin`, `s_in`, `e_in`, `yout`, `s_out`, `e_out`, `ydist`, `status`)
- subroutine `IXMrebin::IXFrebin_1d_hist_get_arr` (`xbounds`, `x_in`, `n_out`, `x_out`, `status`)
- subroutine `IXMrebin::IXFrebin_points` (`px_in`, `xin`, `s_in`, `ein`, `xout`, `s_out`, `eout`, `status`)

## 7.79 libcore/IXMrebunch.f90 File Reference

### Namespaces

- namespace `IXMrebunch`

### Functions

- subroutine `IXMrebunch::IXFrebunchHist` (`x`, `s`, `e`, `x_new`, `s_new`, `e_new`, `xdist`, `nbunch`, `status`)
- subroutine `IXMrebunch::IXFrebunchPoints` (`x`, `s`, `e`, `x_new`, `s_new`, `e_new`, `nbunch`, `status`)
- subroutine `IXMrebunch::IXFrebunch_hist` (`nbunch`, `ntotal`, `s`, `x`, `e`, `x_new`, `s_new`, `e_new`, `xdist`)
- subroutine `IXMrebunch::IXFrebunch_points` (`nbunch`, `ntotal`, `s_in`, `x_in`, `e_in`, `s_out`, `x_out`, `e_out`)
- subroutine `IXMrebunch::IXFrebunchHistX` (`x`, `s`, `e`, `x_new`, `s_new`, `e_new`, `xdist`, `nbunch`, `status`)
- subroutine `IXMrebunch::IXFrebunch_histX_2d` (`nbunch`, `ntotal`, `s`, `x`, `e`, `x_new`, `s_new`, `e_new`, `xdist`)
- subroutine `IXMrebunch::IXFrebunchHistY` (`y`, `s`, `e`, `y_new`, `s_new`, `e_new`, `ydist`, `nbunch`, `status`)
- subroutine `IXMrebunch::IXFrebunch_histY_2d` (`nbunch`, `ntotal`, `s`, `y`, `e`, `y_new`, `s_new`, `e_new`, `ydist`)
- subroutine `IXMrebunch::IXFrebunchXY` (`x`, `y`, `s`, `e`, `x_new`, `y_new`, `s_new`, `e_new`, `xdist`, `ydist`, `xhist`, `yhist`, `Xbunch`, `Ybunch`, `status`)
- subroutine `IXMrebunch::IXFrebunchPointsX` (`x`, `s`, `e`, `x_new`, `s_new`, `e_new`, `nbunch`, `status`)
- subroutine `IXMrebunch::IXFrebunchPointsY` (`y`, `s`, `e`, `y_new`, `s_new`, `e_new`, `nbunch`, `status`)
- subroutine `IXMrebunch::IXFrebunch_pointsX` (`nbunch`, `ntotal`, `s_in`, `x_in`, `e_in`, `s_out`, `x_out`, `e_out`)
- subroutine `IXMrebunch::IXFrebunch_pointsY` (`nbunch`, `ntotal`, `s_in`, `y_in`, `e_in`, `s_out`, `y_out`, `e_out`)

## 7.80 libcore/IXMregroup.f90 File Reference

### Namespaces

- namespace **IXMregroup**

### Functions

- subroutine **IXMregroup::IXFregroup\_1d\_hist** (xmin, delta, xmax, xdist, xin, yin, ein, xout, yout, eout, nout, status)
- subroutine **IXMregroup::IXFregroupX\_2d\_hist** (xmin, delta, xmax, xdist, x\_in, s\_in, e\_in, x\_out, s\_out, e\_out, nout, status)
- subroutine **IXMregroup::IXFregroupY\_2d\_hist** (ymin, delta, ymax, ydist, y\_in, s\_in, e\_in, y\_out, s\_out, e\_out, nout, status)

## 7.81 libcore/IXMshift.f90 File Reference

### Namespaces

- namespace `IXMshift`

### Functions

- subroutine `IXMshift::IXFshift (array_in, array_out, shift)`

## 7.82 libcore/IXMsort.f90 File Reference

### Namespaces

- namespace `m_refsor`
- namespace `m_unirnk`
- namespace `m_mrgrnk`
- namespace `IXMsort`
- namespace `m_valmed`

### Classes

- interface `m_refsor::IXFsort`
- interface `m_unirnk::IXFunique_rank`
- interface `m_mrgrnk::IXFrank`

### Functions

- subroutine `m_refsor::D_refsor (XDONT)`
- subroutine `m_refsor::D_subsor (XDONT, IDEB1, IFIN1)`
- subroutine `m_refsor::D_inssor (XDONT)`
- subroutine `m_refsor::R_refsor (XDONT)`
- subroutine `m_refsor::R_subsor (XDONT, IDEB1, IFIN1)`
- subroutine `m_refsor::R_inssor (XDONT)`
- subroutine `m_refsor::I_refsor (XDONT)`
- subroutine `m_refsor::I_subsor (XDONT, IDEB1, IFIN1)`
- subroutine `m_refsor::I_inssor (XDONT)`
- subroutine `m_unirnk::D_unirnk (XVALT, IRNGT, NUNI)`
- subroutine `m_unirnk::R_unirnk (XVALT, IRNGT, NUNI)`
- subroutine `m_unirnk::I_unirnk (XVALT, IRNGT, NUNI)`
- Real(kind=kdp) `m_unirnk::D_nearless (XVAL)`
- Real `m_unirnk::R_nearless (XVAL)`
- Integer `m_unirnk::I_nearless (XVAL)`
- Real(kind=kdp) `m_mrgrnk::D_valmed (XDONT)`
- Real `m_mrgrnk::R_valmed (XDONT)`
- Integer `m_mrgrnk::I_valmed (XDONT)`

### Variables

- Integer, parameter `m_refsor::kdp = selected_real_kind(15)`
- Integer, parameter `m_unirnk::kdp = selected_real_kind(15)`
- Integer, parameter `m_mrgrnk::kdp = selected_real_kind(15)`

## 7.83 libcore/IXMstatus.f90 File Reference

### Namespaces

- namespace `IXMstatus`

### Classes

- struct `IXMstatus::IXTstatus_condition`
- struct `IXMstatus::IXTstatus`
- interface `IXMstatus::interface`
- interface `IXMstatus::interface`
- interface `IXMstatus::IXFadd_status`
- interface `IXMstatus::IXFcheck_status`
- interface `IXMstatus::IXFclear_status`
- interface `IXMstatus::IXFreport_status`

### Functions

- subroutine `IXMstatus::IXFinit_status (source, status)`
- logical `IXMstatus::equal_status (a, b)`
- logical `IXMstatus::check_global_status (status_type)`
- logical `IXMstatus::notequal_status (a, b)`
- subroutine `IXMstatus::clear_local_status (status, report)`
- subroutine `IXMstatus::clear_global_status (report)`
- subroutine `IXMstatus::report_local_status (status)`
- subroutine `IXMstatus::report_global_status ()`
- subroutine `IXMstatus::make_message_status (condition, message)`
- subroutine `IXMstatus::add_source_status (status, source)`
- subroutine `IXMstatus::remove_source_status (status)`
- subroutine `IXMstatus::add_local_status (status, facility, severity, code, message)`
- subroutine `IXMstatus::add_global_status (facility, severity, code, message)`
- logical `IXMstatus::check_warning_status (status, default_source)`
- logical `IXMstatus::check_error_status (status, default_source)`
- subroutine `IXMstatus::make_traceback_status (status, traceback)`
- logical `IXMstatus::check_local_status (status, status_type, default_source)`

### Variables

- integer, parameter `IXMstatus::IXCseverity_ok = 1`
- integer, parameter `IXMstatus::IXCseverity_warning = 2`
- integer, parameter `IXMstatus::IXCseverity_info = 3`
- integer, parameter `IXMstatus::IXCseverity_error = 4`
- integer, parameter `IXMstatus::IXCseverity_debug = 5`
- integer, parameter `IXMstatus::IXCseverity_fatal = 6`
- character(len=1), parameter `IXMstatus::IXCseverity_names = (/ 'S','W','I','E','D','F' /)`
- type(`IXTstatus`), save `IXMstatus::IXGstatus`

## 7.84 libcore/IXMtools.f90 File Reference

### Namespaces

- namespace `IXMtools`

### Functions

- subroutine `IXMtools::unitno` (`iunit`)
- `integer(i4b)` `IXMtools::shutfl` (`iunit`)
- subroutine `IXMtools::remark` (`string`)
- subroutine `IXMtools::prompt` (`string`)
- subroutine `IXMtools::homer_message` (`intro`, `message`, `fname`)
- `integer(i4b)` `IXMtools::getlin` (`line`)
- `integer(i4b)` `IXMtools::getlf` (`iunit`, `line`)
- subroutine `IXMtools::read_line` (`iunit`, `line`, `len_line`)
- `integer(i4b)` `IXMtools::inext` (`string`, `i`)
- `integer(i4b)` `IXMtools::inxtch` (`string`, `i`, `ch`)
- `integer(i4b)` `IXMtools::iprvch` (`string`, `i`, `ch`)
- `integer(i4b)` `IXMtools::idelim` (`string`, `i`, `ch`)
- `integer(i4b)` `IXMtools::lenstr` (`string`)
- subroutine `IXMtools::upcase` (`string`)
- subroutine `IXMtools::locase` (`string`)
- subroutine `IXMtools::cspace` (`string`)
- `integer(i4b)` `IXMtools::ctoxi` (`string`, `i`)
- `integer(i4b)` `IXMtools::ctoxi2` (`string`, `i`, `k1`, `k2`)
- `integer(i4b)` `IXMtools::ctoi` (`string`, `i`)
- `integer(i4b)` `IXMtools::ctoi2` (`string`, `i`, `k1`, `k2`)
- `integer(i4b)` `IXMtools::geti` (`string`, `i`, `value`, `iproblem`)
- `integer(i4b)` `IXMtools::getis` (`string`, `i`, `values`, `m`, `iproblem`)
- `real(dp)` `IXMtools::ctoxd` (`string`, `i`)
- `real(dp)` `IXMtools::ctod` (`string`, `i`)
- `integer(i4b)` `IXMtools::getd` (`string`, `i`, `value`, `iproblem`)
- `integer(i4b)` `IXMtools::getds` (`string`, `i`, `values`, `m`, `iproblem`)
- `real(sp)` `IXMtools::ctoxr` (`string`, `i`)
- `real(sp)` `IXMtools::ctor` (`string`, `i`)
- `integer(i4b)` `IXMtools::getr` (`string`, `i`, `value`, `iproblem`)
- `integer(i4b)` `IXMtools::getrs` (`string`, `i`, `values`, `m`, `iproblem`)

### Variables

- `integer(i4b)`, parameter `IXMtools::stdin` = `-5_i4b`
- `integer(i4b)`, parameter `IXMtools::stdout` = `-6_i4b`
- `integer(i4b)`, parameter `IXMtools::ok` = `0_i4b`
- `integer(i4b)`, parameter `IXMtools::warn` = `-1_i4b`
- `integer(i4b)`, parameter `IXMtools::err` = `-100_i4b`
- `integer(i4b)`, parameter `IXMtools::eof` = `-101_i4b`
- `integer(i4b)`, parameter `IXMtools::read` = `1001_i4b`
- `integer(i4b)`, parameter `IXMtools::readwr` = `1002_i4b`



- integer(i4b), parameter IXMtools::old = 1101\_i4b
- integer(i4b), parameter IXMtools::new = 1102\_i4b
- integer(i4b), parameter IXMtools::oldnew = 1103\_i4b
- character(len=4), parameter IXMtools::trail\_space =  
achar(9)//achar(32)//achar(0)//achar(13)
- character(len=2), parameter IXMtools::numeric\_list\_terminator = '

## 7.85 libcore/IXMtype\_definitions.f90 File Reference

```
#include "ixctypes.f90"
```

Include dependency graph for IXMtype\_definitions.f90:



### Namespaces

- namespace `IXMtype_definitions`

### Variables

- integer, parameter `IXMtype_definitions::i4b = selected_int_kind(9)`
- integer, parameter `IXMtype_definitions::i2b = selected_int_kind(4)`
- integer, parameter `IXMtype_definitions::i1b = selected_int_kind(2)`
- integer, parameter `IXMtype_definitions::sp = kind(1.0)`
- integer, parameter `IXMtype_definitions::dp = kind(1.0d0)`
- integer, parameter `IXMtype_definitions::spc = kind((1.0`
- integer, parameter `IXMtype_definitions::dpc = kind((1.0d0`
- integer, parameter `IXMtype_definitions::d0`
- integer, parameter `IXMtype_definitions::lgt = kind(.true.)`
- real(sp), parameter `IXMtype_definitions::pi_sp = 3.141592653589793238462643383279502884197_sp`
- real(sp), parameter `IXMtype_definitions::pio2_sp = 1.57079632679489661923132169163975144209858_sp`
- real(sp), parameter `IXMtype_definitions::twopi_sp = 6.283185307179586476925286766559005768394_sp`
- real(sp), parameter `IXMtype_definitions::fourpi_sp = 12.56637061435917295385057353311801153679_sp`
- real(sp), parameter `IXMtype_definitions::sqrt2_sp = 1.41421356237309504880168872420969807856967_sp`
- real(sp), parameter `IXMtype_definitions::euler_sp = 0.5772156649015328606065120900824024310422_sp`
- real(sp), parameter `IXMtype_definitions::deg_to_rad_sp = 0.01745329251994329576923690768488612713443_sp`
- real(sp), parameter `IXMtype_definitions::rad_to_deg_sp = 57.29577951308232087679815481410517033241_sp`
- real(dp), parameter `IXMtype_definitions::pi_dp = 3.141592653589793238462643383279502884197_dp`
- real(dp), parameter `IXMtype_definitions::pio2_dp = 1.57079632679489661923132169163975144209858_dp`
- real(dp), parameter `IXMtype_definitions::twopi_dp = 6.283185307179586476925286766559005768394_dp`
- real(dp), parameter `IXMtype_definitions::fourpi_dp = 12.56637061435917295385057353311801153679_dp`
- real(dp), parameter `IXMtype_definitions::sqrt2_dp = 1.41421356237309504880168872420969807856967_dp`

- `real(dp), parameter IXMtype_definitions::euler_dp = 0.5772156649015328606065120900824024310422_dp`
- `real(dp), parameter IXMtype_definitions::deg_to_rad_dp = 0.01745329251994329576923690768488612713443_dp`
- `real(dp), parameter IXMtype_definitions::rad_to_deg_dp = 57.29577951308232087679815481410517033241_dp`
- `real(sp), parameter IXMtype_definitions::null_sp = -1.0e30`
- `real(dp), parameter IXMtype_definitions::null_dp = -1.0d30`
- `real(sp), parameter IXMtype_definitions::epsilon_sp = epsilon(1.0_sp)`
- `real(dp), parameter IXMtype_definitions::epsilon_dp = epsilon(1.0_dp)`
- `integer(i4b), parameter IXMtype_definitions::name_len = 256`
- `integer(i4b), parameter IXMtype_definitions::long_len = 256`
- `integer(i4b), parameter IXMtype_definitions::short_len = 32`
- `real(dp), parameter IXMtype_definitions::IXCundef_dp = 0.0_dp / 0.0_dp`
- `real(sp), parameter IXMtype_definitions::IXCundef_sp = 0.0_sp / 0.0_sp`
- `integer(i4b), parameter IXMtype_definitions::IXCundef_i4b = 0`
- `logical(i4b), parameter IXMtype_definitions::IXCundef_logical = .false.`
- `character(len=*) , parameter IXMtype_definitions::IXCundef_char = 'undefined'`

## 7.86 libcore/IXMunits\_utils.f90 File Reference

### Namespaces

- namespace `IXMunits_utils`

### Functions

- subroutine `IXMunits_utils::IXFunits_get_len_arr` (`units_in`, `x_in`, `units_out`, `emode`, `delta`, `x1`, `x2`, `twotheta`, `efix`, `ilo`, `ihi`, `ctot`, `gtot`, `sgn_in`, `shift_in`, `qopt_in`, `sgn_out`, `shift_out`, `qopt_out`, `status`)
- subroutine `IXMunits_utils::IXFunits_convert` (`xin`, `yin`, `ein`, `emode`, `twotheta`, `efix`, `dist_in`, `ilo`, `ihi`, `ctot`, `gtot`, `sgn_in`, `shift_in`, `qopt_in`, `sgn_out`, `shift_out`, `qopt_out`, `xout`, `yout`, `eout`, `status`)
- integer(i4b) `IXMunits_utils::units_check_parameters` (`emode`, `delta`, `x1`, `x2`, `twotheta`, `efix`)
- integer(i4b), parameter `IXMunits_utils::units_check_codes` (`emode`, `units_in`, `units_out`)
- integer(i4b), parameter `IXMunits_utils::units_xconvert` (`xin`, `ilo`, `ihi`, `ctot`, `gtot`, `sgn_in`, `shift_in`, `sgn_out`, `shift_out`, `xout`)
- integer(i4b), parameter `IXMunits_utils::units_composite_coefficients` (`emode`, `delta`, `x1`, `x2`, `twotheta`, `efix`, `a_in`, `b_in`, `g_in`, `c_in`, `a_out`, `b_out`, `g_out`, `c_out`, `ctot`, `gtot`)
- integer(i4b), parameter `IXMunits_utils::units_coefficients` (`units`, `emode`, `delta`, `x1`, `x2`, `twotheta`, `efix`, `units_parsed`, `a`, `b`, `g`, `c`, `sgn`, `shift`, `qopt`)

### Variables

- integer(i4b), parameter `IXMunits_utils::ok = 0_i4b`
- integer(i4b), parameter `IXMunits_utils::warn = -1_i4b`
- integer(i4b), parameter `IXMunits_utils::err = -100_i4b`
- integer(i4b), parameter `IXMunits_utils::eof = -101_i4b`

## 7.87 libcore/IXMunspike.f90 File Reference

### Namespaces

- namespace **IXMunspike**

### Functions

- subroutine **IXMunspike::IXFunspike\_1d** (status, x\_in, y\_in, e\_in, y\_out, e\_out, ymin, ymax, fac, sfac, nbad)

## 7.88 libcore/libcore.c File Reference

### Defines

- `#define CALL_MODE`
- `#define c_associate_integer4 c_associate_integer4__`
- `#define c_associate_real8 c_associate_real8__`
- `#define c_associate_array_dp1 c_associate_array_dp1__`
- `#define c_associate_array_dp2 c_associate_array_dp2__`
- `#define c_associate_array_dp3 c_associate_array_dp3__`
- `#define c_associate_array_dp4 c_associate_array_dp4__`
- `#define c_associate_array_i1 c_associate_array_i1__`
- `#define c_associate_array_i2 c_associate_array_i2__`
- `#define c_associate_array_i3 c_associate_array_i3__`
- `#define c_associate_array_i4 c_associate_array_i4__`
- `#define c_associate_array_c1 c_associate_array_c1__`
- `#define c_hashmemory c_hashmemory__`

### Functions

- `int c_hashmemory__ (const void *address, const int *hash)`
- `void c_associate_integer4__ (int **ptr, int *value)`
- `void c_associate_real8__ (double **ptr, double *value)`

#### 7.88.1 Define Documentation

##### 7.88.1.1 `#define c_associate_array_c1 c_associate_array_c1__`

Definition at line 27 of file libcore.c.

##### 7.88.1.2 `#define c_associate_array_dp1 c_associate_array_dp1__`

Definition at line 19 of file libcore.c.

##### 7.88.1.3 `#define c_associate_array_dp2 c_associate_array_dp2__`

Definition at line 20 of file libcore.c.

##### 7.88.1.4 `#define c_associate_array_dp3 c_associate_array_dp3__`

Definition at line 21 of file libcore.c.

##### 7.88.1.5 `#define c_associate_array_dp4 c_associate_array_dp4__`

Definition at line 22 of file libcore.c.

**7.88.1.6** `#define c_associate_array_i1 c_associate_array_i1 __`

Definition at line 23 of file libcore.c.

**7.88.1.7** `#define c_associate_array_i2 c_associate_array_i2 __`

Definition at line 24 of file libcore.c.

**7.88.1.8** `#define c_associate_array_i3 c_associate_array_i3 __`

Definition at line 25 of file libcore.c.

**7.88.1.9** `#define c_associate_array_i4 c_associate_array_i4 __`

Definition at line 26 of file libcore.c.

**7.88.1.10** `#define c_associate_integer4 c_associate_integer4 __`

Definition at line 17 of file libcore.c.

Referenced by IXMmemory::associate\_integer4().

**7.88.1.11** `#define c_associate_real8 c_associate_real8 __`

Definition at line 18 of file libcore.c.

Referenced by IXMmemory::associate\_real8().

**7.88.1.12** `#define c_hashmemory c_hashmemory __`

Definition at line 28 of file libcore.c.

**7.88.1.13** `#define CALL_MODE`

Definition at line 16 of file libcore.c.

**7.88.2 Function Documentation****7.88.2.1** `void c_associate_integer4__(int ** ptr, int * value)`

Definition at line 37 of file libcore.c.

**7.88.2.2** `void c_associate_real8__(double ** ptr, double * value)`

Definition at line 42 of file libcore.c.

**7.88.2.3** `int c_hashmemory__(const void * address, const int * hash)`

Definition at line 32 of file libcore.c.

## 7.89 libcore/memory\_utils.f90 File Reference

### Functions

- subroutine `associate_x_array_i4` (`value`, `x`, `n1`, `n2`, `n3`, `n4`)
- subroutine `associate_x_array_i3` (`value`, `x`, `nx`, `ny`, `nz`)
- subroutine `associate_x_array_i2` (`value`, `x`, `nx`, `ny`)
- subroutine `associate_x_array_i1` (`value`, `x`, `nx`)
- subroutine `associate_x_array_dp4` (`value`, `x`, `n1`, `n2`, `n3`, `n4`)
- subroutine `associate_x_array_dp3` (`value`, `x`, `nx`, `ny`, `nz`)
- subroutine `associate_x_array_dp2` (`value`, `x`, `nx`, `ny`)
- subroutine `associate_x_array_dp1` (`value`, `x`, `nx`)
- subroutine `associate_x_array_c1` (`value`, `x`, `nx`)

### 7.89.1 Function Documentation

**7.89.1.1** subroutine `associate_x_array_c1` (`character(len=*)`,`dimension(:)`,`pointer value`, `integer(i4b)`,`dimension(nx)`,`target x`, `integer nx`)

Definition at line 73 of file `memory_utils.f90`.

**7.89.1.2** subroutine `associate_x_array_dp1` (`real(dp)`,`dimension(:)`,`pointer value`, `real(dp)`,`dimension(nx)`,`target x`, `integer nx`)

Definition at line 64 of file `memory_utils.f90`.

**7.89.1.3** subroutine `associate_x_array_dp2` (`real(dp)`,`dimension(:,:)`,`pointer value`, `real(dp)`,`dimension(nx, ny)`,`target x`, `integer nx`, `integer ny`)

Definition at line 55 of file `memory_utils.f90`.

**7.89.1.4** subroutine `associate_x_array_dp3` (`real(dp)`,`dimension(:,,:)`,`pointer value`, `real(dp)`,`dimension(nx, ny, nz)`,`target x`, `integer nx`, `integer ny`, `integer nz`)

Definition at line 46 of file `memory_utils.f90`.

**7.89.1.5** subroutine `associate_x_array_dp4` (`real(dp)`,`dimension(:,,:,:))`,`pointer value`, `real(dp)`,`dimension(n1, n2, n3, n4)`,`target x`, `integer n1`, `integer n2`, `integer n3`, `integer n4`)

Definition at line 37 of file `memory_utils.f90`.

**7.89.1.6** subroutine `associate_x_array_i1` (`integer(i4b)`,`dimension(:)`,`pointer value`, `integer(i4b)`,`dimension(nx)`,`target x`, `integer nx`)

Definition at line 28 of file `memory_utils.f90`.



**7.89.1.7** subroutine `associate_x_array_i2` (`integer(i4b),dimension(:,:),pointer value`, `integer(i4b),dimension(nx, ny),target x`, `integer nx`, `integer ny`)

Definition at line 19 of file `memory_utils.f90`.

**7.89.1.8** subroutine `associate_x_array_i3` (`integer(i4b),dimension(:, :, :),pointer value`, `integer(i4b),dimension(nx, ny, nz),target x`, `integer nx`, `integer ny`, `integer nz`)

Definition at line 10 of file `memory_utils.f90`.

**7.89.1.9** subroutine `associate_x_array_i4` (`integer(i4b),dimension(:, :, :, :),pointer value`, `integer(i4b),dimension(n1, n2, n3, n4),target x`, `integer n1`, `integer n2`, `integer n3`, `integer n4`)

Definition at line 1 of file `memory_utils.f90`.

# Index

- IXMoperation, 207
- A
  - IXMoperation, 207
- a
  - IXMlattice::IXTlattice, 632
- a\_0
  - IXMneutron\_units, 190
- add\_global\_status
  - IXMstatus, 269
  - IXMstatus::IXFadd\_status, 392
- add\_local\_status
  - IXMstatus, 269
  - IXMstatus::IXFadd\_status, 392
- add\_source\_status
  - IXMstatus, 270
- address
  - IXMuser::IXTuser, 682
- affiliation
  - IXMuser::IXTuser, 682
- alpha
  - IXMlattice::IXTlattice, 633
- angle
  - IXMmoderator::IXTmoderator, 639
- apertures
  - IXMinstrument::IXTinstrument, 629
- area
  - IXMmoments::IXTmoments, 641
- array\_index
  - IXMoperation::IXToperation, 653
- arrayCheck\_1D
  - IXMarraymanips::IXFarrayCheck, 393
- arrayCheck\_2D
  - IXMarraymanips::IXFarrayCheck, 393
- arrayCheck\_3D
  - IXMarraymanips::IXFarrayCheck, 393
- arrayCos\_1D
  - IXMarraymanips::IXFarrayCos, 394
- arrayCos\_2D
  - IXMarraymanips::IXFarrayCos, 394
- arrayCos\_3D
  - IXMarraymanips::IXFarrayCos, 394
- arrayCosh\_1D
  - IXMarraymanips::IXFarrayCosh, 395
- arrayCosh\_2D
  - IXMarraymanips::IXFarrayCosh, 395
- arrayCosh\_3D
  - IXMarraymanips::IXFarrayCosh, 395
- arrayDivideAD\_1D
  - IXMarraymanips::IXFarrayDivideAD, 397
- arrayDivideAD\_2D
  - IXMarraymanips::IXFarrayDivideAD, 397
- arrayDivideAD\_3D
  - IXMarraymanips::IXFarrayDivideAD, 397
- arrayDivideDA\_1D
  - IXMarraymanips::IXFarrayDivideDA, 398
- arrayDivideDA\_2D
  - IXMarraymanips::IXFarrayDivideDA, 398
- arrayDivideDA\_3D
  - IXMarraymanips::IXFarrayDivideDA, 398
- arrayDivideDD\_1D
  - IXMarraymanips::IXFarrayDivide, 396
- arrayDivideDD\_2D
  - IXMarraymanips::IXFarrayDivide, 396
- arrayDivideDD\_3D
  - IXMarraymanips::IXFarrayDivide, 396
- arrayDivideDS\_1D
  - IXMarraymanips::IXFarrayDivide, 396
- arrayDivideDS\_2D
  - IXMarraymanips::IXFarrayDivide, 396
- arrayDivideDS\_3D
  - IXMarraymanips::IXFarrayDivide, 396
- arrayDivideSD\_1D
  - IXMarraymanips::IXFarrayDivide, 396
- arrayDivideSD\_2D
  - IXMarraymanips::IXFarrayDivide, 396
- arrayDivideSD\_3D
  - IXMarraymanips::IXFarrayDivide, 396
- arrayExp\_1D
  - IXMarraymanips::IXFarrayExp, 399
- arrayExp\_2D
  - IXMarraymanips::IXFarrayExp, 399
- arrayExp\_3D
  - IXMarraymanips::IXFarrayExp, 399
- arrayLog\_1D
  - IXMarraymanips::IXFarrayLog, 400
- arrayLog\_2D
  - IXMarraymanips::IXFarrayLog, 400
- arrayLog\_3D
  - IXMarraymanips::IXFarrayLog, 400

- IXMarraymanips::IXFarrayLog, 400
- arrayMinusAD\_1D
  - IXMarraymanips::IXFarrayMinusAD, 402
- arrayMinusAD\_2D
  - IXMarraymanips::IXFarrayMinusAD, 402
- arrayMinusAD\_3D
  - IXMarraymanips::IXFarrayMinusAD, 402
- arrayMinusDA\_1D
  - IXMarraymanips::IXFarrayMinusDA, 403
- arrayMinusDA\_2D
  - IXMarraymanips::IXFarrayMinusDA, 403
- arrayMinusDA\_3D
  - IXMarraymanips::IXFarrayMinusDA, 403
- arrayMinusDD\_1D
  - IXMarraymanips::IXFarrayMinus, 401
- arrayMinusDD\_2D
  - IXMarraymanips::IXFarrayMinus, 401
- arrayMinusDD\_3D
  - IXMarraymanips::IXFarrayMinus, 401
- arrayMinusDS\_1D
  - IXMarraymanips::IXFarrayMinus, 401
- arrayMinusDS\_2D
  - IXMarraymanips::IXFarrayMinus, 401
- arrayMinusDS\_3D
  - IXMarraymanips::IXFarrayMinus, 401
- arrayMinusSD\_1D
  - IXMarraymanips::IXFarrayMinus, 401
- arrayMinusSD\_2D
  - IXMarraymanips::IXFarrayMinus, 401
- arrayMinusSD\_3D
  - IXMarraymanips::IXFarrayMinus, 401
- arrayPlusAD\_1D
  - IXMarraymanips::IXFarrayPlusAD, 405
- arrayPlusAD\_2D
  - IXMarraymanips::IXFarrayPlusAD, 405
- arrayPlusAD\_3D
  - IXMarraymanips::IXFarrayPlusAD, 405
- arrayPlusDA\_1D
  - IXMarraymanips::IXFarrayPlusDA, 406
- arrayPlusDA\_2D
  - IXMarraymanips::IXFarrayPlusDA, 406
- arrayPlusDA\_3D
  - IXMarraymanips::IXFarrayPlusDA, 406
- arrayPlusDD\_1D
  - IXMarraymanips::IXFarrayPlus, 404
- arrayPlusDD\_2D
  - IXMarraymanips::IXFarrayPlus, 404
- arrayPlusDD\_3D
  - IXMarraymanips::IXFarrayPlus, 404
- arrayPlusDS\_1D
  - IXMarraymanips::IXFarrayPlus, 404
- arrayPlusDS\_2D
  - IXMarraymanips::IXFarrayPlus, 404
- arrayPlusDS\_3D
  - IXMarraymanips::IXFarrayPlus, 404
- arrayPlusSD\_1D
  - IXMarraymanips::IXFarrayPlus, 404
- arrayPlusSD\_2D
  - IXMarraymanips::IXFarrayPlus, 404
- arrayPlusSD\_3D
  - IXMarraymanips::IXFarrayPlus, 404
- arrayPowerDD\_1D
  - IXMarraymanips::IXFarrayPower, 407
- arrayPowerDD\_2D
  - IXMarraymanips::IXFarrayPower, 407
- arrayPowerDD\_3D
  - IXMarraymanips::IXFarrayPower, 407
- arrayPowerDS\_1D
  - IXMarraymanips::IXFarrayPower, 407
- arrayPowerDS\_2D
  - IXMarraymanips::IXFarrayPower, 407
- arrayPowerDS\_3D
  - IXMarraymanips::IXFarrayPower, 407
- arrayPowerSD\_1D
  - IXMarraymanips::IXFarrayPower, 407
- arrayPowerSD\_2D
  - IXMarraymanips::IXFarrayPower, 407
- arrayPowerSD\_3D
  - IXMarraymanips::IXFarrayPower, 407
- arraySin\_1D
  - IXMarraymanips::IXFarraySin, 408
- arraySin\_2D
  - IXMarraymanips::IXFarraySin, 408
- arraySin\_3D
  - IXMarraymanips::IXFarraySin, 408
- arraySinh\_1D
  - IXMarraymanips::IXFarraySinh, 409
- arraySinh\_2D
  - IXMarraymanips::IXFarraySinh, 409
- arraySinh\_3D
  - IXMarraymanips::IXFarraySinh, 409
- arrayTan\_1D
  - IXMarraymanips::IXFarrayTan, 410
- arrayTan\_2D
  - IXMarraymanips::IXFarrayTan, 410
- arrayTan\_3D
  - IXMarraymanips::IXFarrayTan, 410
- arrayTanh\_1D
  - IXMarraymanips::IXFarrayTanh, 411
- arrayTanh\_2D
  - IXMarraymanips::IXFarrayTanh, 411
- arrayTanh\_3D
  - IXMarraymanips::IXFarrayTanh, 411
- arrayTimesAD\_1D
  - IXMarraymanips::IXFarrayTimesAD, 413
- arrayTimesAD\_2D
  - IXMarraymanips::IXFarrayTimesAD, 413
- arrayTimesAD\_3D
  - IXMarraymanips::IXFarrayTimesAD, 413

- IXMarraymanips::IXFarrayTimesAD, 413
- arrayTimesDA\_1D
  - IXMarraymanips::IXFarrayTimesDA, 414
- arrayTimesDA\_2D
  - IXMarraymanips::IXFarrayTimesDA, 414
- arrayTimesDA\_3D
  - IXMarraymanips::IXFarrayTimesDA, 414
- arrayTimesDD\_1D
  - IXMarraymanips::IXFarrayTimes, 412
- arrayTimesDD\_2D
  - IXMarraymanips::IXFarrayTimes, 412
- arrayTimesDD\_3D
  - IXMarraymanips::IXFarrayTimes, 412
- arrayTimesDS\_1D
  - IXMarraymanips::IXFarrayTimes, 412
- arrayTimesDS\_2D
  - IXMarraymanips::IXFarrayTimes, 412
- arrayTimesDS\_3D
  - IXMarraymanips::IXFarrayTimes, 412
- arrayTimesSD\_1D
  - IXMarraymanips::IXFarrayTimes, 412
- arrayTimesSD\_2D
  - IXMarraymanips::IXFarrayTimes, 412
- arrayTimesSD\_3D
  - IXMarraymanips::IXFarrayTimes, 412
- associate\_integer4
  - IXMmemory, 179
- associate\_real8
  - IXMmemory, 179
- associate\_x\_array\_c1
  - memory\_utils.f90, 888
- associate\_x\_array\_dp1
  - memory\_utils.f90, 888
- associate\_x\_array\_dp2
  - memory\_utils.f90, 888
- associate\_x\_array\_dp3
  - memory\_utils.f90, 888
- associate\_x\_array\_dp4
  - memory\_utils.f90, 888
- associate\_x\_array\_i1
  - memory\_utils.f90, 888
- associate\_x\_array\_i2
  - memory\_utils.f90, 888
- associate\_x\_array\_i3
  - memory\_utils.f90, 889
- associate\_x\_array\_i4
  - memory\_utils.f90, 889
- at\_divide\_dataset\_1d
  - IXMdataset\_1d::IXFdivide, 436
  - IXMdataset\_1d::IXFdivide\_dataset\_1d, 439
- at\_divide\_dataset\_2d
  - IXMdataset\_2d::IXFdivide, 437
- IXMdataset\_2d::IXFdivide\_dataset\_2d, 440
- at\_minus\_dataset\_1d
  - IXMdataset\_1d::IXFminus, 477
  - IXMdataset\_1d::IXFminus\_dataset\_1d, 481
- at\_minus\_dataset\_2d
  - IXMdataset\_2d::IXFminus, 478
  - IXMdataset\_2d::IXFminus\_dataset\_2d, 482
- at\_plus\_dataset\_1d
  - IXMdataset\_1d::IXFplus, 502
  - IXMdataset\_1d::IXFplus\_dataset\_1d, 506
- at\_plus\_dataset\_2d
  - IXMdataset\_2d::IXFplus, 503
- at\_plus\_dataset\_2d
  - IXMdataset\_2d::IXFplus\_dataset\_2d, 507
- at\_t\_divide\_dataset\_2d
  - IXMdataset\_2d::IXFdivide, 437
  - IXMdataset\_2d::IXFdivide\_dataset\_2d, 440
- at\_t\_minus\_dataset\_2d
  - IXMdataset\_2d::IXFminus, 478
  - IXMdataset\_2d::IXFminus\_dataset\_2d, 482
- at\_t\_plus\_dataset\_2d
  - IXMdataset\_2d::IXFplus, 503
  - IXMdataset\_2d::IXFplus\_dataset\_2d, 507
- at\_t\_times\_dataset\_2d
  - IXMdataset\_2d::IXFtimes, 552
  - IXMdataset\_2d::IXFtimes\_dataset\_2d, 556
- at\_times\_dataset\_1d
  - IXMdataset\_1d::IXFtimes, 551
  - IXMdataset\_1d::IXFtimes\_dataset\_1d, 555
- at\_times\_dataset\_2d
  - IXMdataset\_2d::IXFtimes, 552
  - IXMdataset\_2d::IXFtimes\_dataset\_2d, 556
- attenuation
  - IXMattenuator::IXTattenuator, 587
- attenuators
  - IXMinstrument::IXTinstrument, 629
- b
  - IXMlattice:IXTlattice, 632
- b\_0
  - IXMneutron\_units, 190
- b\_1
  - IXMneutron\_units, 190

- b\_2
  - IXMneutron\_units, 190
- bad\_spectra\_flag
  - IXMws\_bridge::IXTws\_bridge, 691
- base
  - IXMaperture::IXTaperture, 584
  - IXMattenuator::IXTattenuator, 586
  - IXMbridge::IXTbridge, 589
  - IXMchopper\_instrument::IXTchopper\_instrument, 590
  - IXMcrystalanalyser::IXTcrystalanalyser, 591
  - IXMdata::IXTdata, 593
  - IXMdataset\_1d::IXTdataset\_1d, 596
  - IXMdataset\_2d::IXTdataset\_2d, 598
  - IXMdataset\_3d::IXTdataset\_3d, 600
  - IXMdataset\_4d::IXTdataset\_4d, 603
  - IXMdataset\_nd::IXTdataset\_nd, 605
  - IXMdatum\_array::IXTdatum\_array, 608
  - IXMdet\_he3::IXTdet\_he3, 609
  - IXMdet\_solid::IXTdet\_solid, 611
  - IXMdetector::IXTdetector, 613
  - IXMdiffractio\_n\_
    - instrument::IXTdiffractio\_n\_instrument, 615
  - IXMeffdet\_index::IXTeffdet\_index, 616
  - IXMfermi\_chopper::IXTfermi\_chopper, 617
  - IXMgroup::IXTgroup, 622
  - IXMgroups::IXTgroups, 624
  - IXMinput\_source::IXTinput\_source, 626
  - IXMinstrument::IXTinstrument, 628
  - IXMlattice::IXTlattice, 632
  - IXMmap::IXTmap, 634
  - IXMmask::IXTmask, 636
  - IXMmoderator::IXTmoderator, 638
  - IXMmoments::IXTmoments, 641
  - IXMoptions::IXToptions, 655
  - IXMorientation::IXTorientation, 657
  - IXMpeaks::IXTpeaks, 659
  - IXMrunfile::IXTrunfile, 662
  - IXMsample::IXTsample, 665
  - IXMsource::IXTsource, 669
  - IXMspectra::IXTspectra, 670
  - IXMsw\_bridge::IXTsw\_bridge, 675
  - IXMtestclass::IXTtestclass, 678
  - IXMtranslation::IXTtranslation, 680
  - IXMunits::IXTunits, 681
  - IXMuser::IXTuser, 682
  - IXMworkspace::IXTworkspace, 685
  - IXMws\_bridge::IXTws\_bridge, 690
- beta
  - IXMlattice::IXTlattice, 633
- bgrd
  - IXMoptions::IXToptions, 655
- bindings.f90
  - IXBallocArrayDescriptor, 719
  - IXBcreateBindingFieldIfNeeded, 719
  - IXBcreateBindingPLHS, 720
  - IXBcreateClassArray, 720
  - IXBdeallocArrayDescriptor, 720
  - IXBexternalMakeResult, 720
  - IXBgetArrayData, 720
  - IXBgetFieldFromBinding, 721
  - IXBgetNumberOfElements, 721
  - IXBsendFieldToBinding, 721
  - IXBwrite\_line, 721
- IXD\_DIMS, 719
- IXD\_NAME, 719
- IXD\_TYPE, 719
- bindings/f90/bindings.f90, 715
- bindings/f90/bindings\_utils.c, 722
- bindings\_utils.c
  - ixicalloc\_, 722
  - ixidealloc\_, 722
- bkgd\_slope
  - IXMmoments::IXTmoments, 641
- bkgd\_xmean
  - IXMmoments::IXTmoments, 641
- blade\_width
  - IXMfermi\_chopper::IXTfermi\_chopper, 618
- bridge
  - IXMdata::IXTdata, 594
- buffer\_i1
  - NXmodule, 343
- buffer\_i2
  - NXmodule, 343
- buffer\_i4
  - NXmodule, 343
- buffer\_r4
  - NXmodule, 343
- buffer\_r8
  - NXmodule, 343
- BYTE\_REL\_EXPN
  - IXMisis\_raw\_file.f90, 788
- c
  - IXMlattice::IXTlattice, 632
- c\_0
  - IXMneutron\_units, 191
- c\_1
  - IXMneutron\_units, 191
- c\_2
  - IXMneutron\_units, 191
- c\_associate\_array\_c1
  - libcore.c, 886
- c\_associate\_array\_dpl

- libcore.c, 886
- c\_associate\_array\_dp2
  - libcore.c, 886
- c\_associate\_array\_dp3
  - libcore.c, 886
- c\_associate\_array\_dp4
  - libcore.c, 886
- c\_associate\_array\_i1
  - libcore.c, 886
- c\_associate\_array\_i2
  - libcore.c, 887
- c\_associate\_array\_i3
  - libcore.c, 887
- c\_associate\_array\_i4
  - libcore.c, 887
- c\_associate\_integer4
  - libcore.c, 887
- c\_associate\_integer4\_\_
  - libcore.c, 887
- c\_associate\_real8
  - libcore.c, 887
- c\_associate\_real8\_\_
  - libcore.c, 887
- c\_emev\_to\_ethz
  - IXMneutron\_constants, 187
- c\_emev\_to\_ewav
  - IXMneutron\_constants, 187
- c\_fwhh
  - IXMmoments::IXTmoments, 641
- c\_hashmemory
  - libcore.c, 887
- c\_hashmemory\_\_
  - libcore.c, 887
- c\_k\_to\_emev
  - IXMneutron\_constants, 187
- c\_t\_to\_d
  - IXMneutron\_constants, 187
- c\_t\_to\_emev
  - IXMneutron\_constants, 187
- c\_t\_to\_ethz
  - IXMneutron\_constants, 188
- c\_t\_to\_ewav
  - IXMneutron\_constants, 188
- c\_t\_to\_k
  - IXMneutron\_constants, 188
- c\_t\_to\_lam
  - IXMneutron\_constants, 188
- c\_t\_to\_q
  - IXMneutron\_constants, 188
- c\_t\_to\_sq
  - IXMneutron\_constants, 188
- c\_v\_to\_emev
  - IXMneutron\_constants, 188
- CALL\_MODE
  - libcore.c, 887
- cap\_list
  - IXMneutron\_units, 191
- char
  - IXMwrapped\_var::IXTwrapped\_var, 689
- char1
  - IXMwrapped\_var::IXTwrapped\_var, 689
- character
  - IXMneutron\_units, 191
- charform
  - IXMoperation, 207
- check\_error\_status
  - IXMstatus, 270
- check\_global\_status
  - IXMstatus, 270
  - IXMstatus::IXFcheck\_status, 418
- check\_local\_status
  - IXMstatus, 270
  - IXMstatus::IXFcheck\_status, 418
- check\_warning\_status
  - IXMstatus, 270
- checksum
  - IXMdet\_he3::IXTdet\_he3, 609
  - IXMdet\_solid::IXTdet\_solid, 611
  - IXMdetector::IXTdetector, 613
- chemical\_formula
  - IXMsample::IXTsample, 665
- chop\_inst
  - IXMchopper\_instrument, 35
- ci
  - IXMinstrument::IXTinstrument, 629
- clear\_global\_status
  - IXMstatus, 270
  - IXMstatus::IXFclear\_status, 419
- clear\_local\_status
  - IXMstatus, 271
  - IXMstatus::IXFclear\_status, 419
- CLOSE\_DATA\_FILE
  - IXMisis\_raw\_file.f90, 788
- code
  - IXMstatus::IXTstatus\_condition, 674
  - IXMunits::IXTunits, 681
- code\_list
  - IXMneutron\_units, 191
- command\_line
  - IXMrunfile::IXTrunfile, 662
- count
  - IXMoperation::IXToperation, 653
- counter
  - IXMdata\_source::IXTdata\_source, 595
  - IXMhistory::IXThistory, 625
- CRPT\_ACCESS
  - IXMisis\_raw\_file.f90, 788
- cspace

- IXMtools, 282
- ctod
  - IXMtools, 282
- ctoi
  - IXMtools, 282
- ctoi2
  - IXMtools, 282
- ctor
  - IXMtools, 283
- ctoxd
  - IXMtools, 283
- ctoxi
  - IXMtools, 283
- ctoxi2
  - IXMtools, 283
- ctoxr
  - IXMtools, 284
- curvature
  - IXMfermi\_chopper::IXTfermi\_chopper, 618
- d
  - IXMwrapped\_var::base\_object, 377
- d0
  - IXMtype\_definitions, 296
- d2d
  - IXMtestclass::IXTtestclass, 678
- D\_inssor
  - m\_refsor, 324
- D\_mrgrnk
  - m\_mrgrnk::IXFrank, 524
- D\_nearless
  - m\_unirnk, 326
- d\_rebin
  - IXMoptions::IXToptions, 656
- D\_refsor
  - m\_refsor, 324
- d\_refsor
  - m\_refsor::IXFsort, 542
- D\_subsor
  - m\_refsor, 324
- D\_unirnk
  - m\_unirnk, 326
- d\_units
  - IXMoptions::IXToptions, 655
- D\_valmed
  - m\_mrgrnk, 323
- d\_valmed
  - m\_mrgrnk::IXFrank, 524
- DAE\_ACCESS
  - IXMisis\_raw\_file.f90, 788
- data\_dimensions
  - NXUmodule, 369
- data\_name
  - NXUmodule, 369
- data\_rank
  - NXUmodule, 369
- data\_type
  - NXUmodule, 369
- datasets
  - IXMdata::IXTdata, 593
- datatype
  - IXMdata\_source::IXTdata\_source, 595
- datumDivideSW
  - IXMdatum::IXFdivide, 438
  - IXMdatum::IXFdivide\_Datum, 441
- datumDivideWS
  - IXMdatum::IXFdivide, 438
  - IXMdatum::IXFdivide\_Datum, 441
- datumDivideWW
  - IXMdatum::IXFdivide, 438
  - IXMdatum::IXFdivide\_Datum, 441
- datumMinusSW
  - IXMdatum::IXFminus, 479
  - IXMdatum::IXFminus\_Datum, 483
- datumMinusWS
  - IXMdatum::IXFminus, 479
  - IXMdatum::IXFminus\_Datum, 483
- datumMinusWW
  - IXMdatum::IXFminus, 479
  - IXMdatum::IXFminus\_Datum, 483
- datumPlusSW
  - IXMdatum::IXFplus, 504
  - IXMdatum::IXFplus\_Datum, 508
- datumPlusWS
  - IXMdatum::IXFplus, 504
  - IXMdatum::IXFplus\_Datum, 508
- datumPlusWW
  - IXMdatum::IXFplus, 504
  - IXMdatum::IXFplus\_Datum, 508
- datumPowerSW
  - IXMdatum::IXFpower, 519
  - IXMdatum::IXFpower\_Datum, 522
- datumPowerWS
  - IXMdatum::IXFpower, 519
  - IXMdatum::IXFpower\_Datum, 522
- datumPowerWW
  - IXMdatum::IXFpower, 519
  - IXMdatum::IXFpower\_Datum, 522
- datumTimesSW
  - IXMdatum::IXFtimes, 553
  - IXMdatum::IXFtimes\_Datum, 557
- datumTimesWS
  - IXMdatum::IXFtimes, 553
  - IXMdatum::IXFtimes\_Datum, 557
- datumTimesWW
  - IXMdatum::IXFtimes, 553
  - IXMdatum::IXFtimes\_Datum, 557

- dead\_time
  - IXMdetector::IXTdetector, 613
- DEFAULT\_FILE\_NAME
  - IXMisis\_raw\_file.f90, 789
- deg\_to\_rad\_dp
  - IXMtype\_definitions, 296
- deg\_to\_rad\_sp
  - IXMtype\_definitions, 296
- delay\_time
  - IXMdetector::IXTdetector, 613
- det\_data
  - IXMrunfile::IXTrunfile, 663
- det\_he3
  - IXMdetector::IXTdetector, 614
- det\_index
  - IXMspectra::IXTspectra, 671
- det\_no
  - IXMdetector::IXTdetector, 613
  - IXMspectra::IXTspectra, 671
- det\_solid
  - IXMdetector::IXTdetector, 614
- det\_type
  - IXMdetector::IXTdetector, 613
- detector
  - IXMinstrument::IXTinstrument, 629
- di
  - IXMinstrument::IXTinstrument, 629
- diff\_inst
  - IXMdiffraction\_instrument, 103
- dimensions
  - IXMsample::IXTsample, 667
  - IXMshape::IXTshape, 668
- display
  - IXMoperation::IXToperation, 653
- distance
  - IXMaperture::IXTaperature, 584
  - IXMattenuator::IXTattenuator, 587
  - IXMcrystalanalyser::IXTcrystalanalyser, 591
  - IXMfermi\_chopper::IXTfermi\_chopper, 618
  - IXMmoderator::IXTmoderator, 638
- dp
  - IXMtype\_definitions, 296
  - IXMwrapped\_var::IXTwrapped\_var, 688
- dp1
  - IXMwrapped\_var::IXTwrapped\_var, 688
- dp2
  - IXMwrapped\_var::IXTwrapped\_var, 688
- dp3
  - IXMwrapped\_var::IXTwrapped\_var, 688
- dp4
  - IXMwrapped\_var::IXTwrapped\_var, 688
- dpc
  - IXMtype\_definitions, 296
- dspace
  - IXMcrystalanalyser::IXTcrystalanalyser, 592
- e
  - IXMdataset\_nd::IXTdataset\_nd, 606
- EFF
  - IXMefficiency, 107
- eff\_det
  - IXMworkspace::IXTworkspace, 685
- EFFCHB
  - IXMefficiency, 107
- effdet\_index
  - IXMworkspace::IXTworkspace, 685
- electric\_coord
  - IXMsample::IXTsample, 665
- electric\_field
  - IXMsample::IXTsample, 665
- electron\_charge
  - IXMphysical\_constants, 221
- electron\_charge\_mantissa
  - IXMphysical\_constants, 221
- email
  - IXMuser::IXTuser, 683
- end\_time
  - IXMrunfile::IXTrunfile, 662
- endian\_convert.c
  - IEEE\_DBL\_BIAS, 724
  - ieee\_double\_to\_local, 725
  - ieee\_float\_to\_local, 725
  - IEEE\_SNG\_BIAS, 724
  - IEEEFP, 724
  - local\_to\_ieee\_double, 725
  - local\_to\_ieee\_float, 725
  - local\_to\_vax\_int, 725
  - local\_to\_vax\_ints, 725
  - local\_to\_vax\_short, 725
  - local\_to\_vax\_shorts, 725
  - local\_to\_vaxf, 726
  - MASK, 724
  - maybe\_flip\_bytes, 724
  - mmax, 724
  - mmin, 724
  - swap\_int, 724
  - swap\_short, 724
  - VAX\_DBL\_BIAS, 725
  - VAX\_SNG\_BIAS, 725
  - vax\_to\_local\_int, 726
  - vax\_to\_local\_ints, 726
  - vax\_to\_local\_short, 726
  - vax\_to\_local\_shorts, 726
  - vaxf\_to\_local, 726
- endian\_convert.h



- fort\_int, 727
- FORTTRAN\_CALL, 727
- ieee\_double\_to\_local, 727
- ieee\_float\_to\_local, 727
- local\_to\_ieee\_double, 727
- local\_to\_ieee\_float, 728
- local\_to\_vax\_int, 728
- local\_to\_vax\_ints, 728
- local\_to\_vax\_short, 728
- local\_to\_vax\_shorts, 728
- local\_to\_vaxf, 728
- vax\_to\_local\_int, 728
- vax\_to\_local\_ints, 728
- vax\_to\_local\_short, 728
- vax\_to\_local\_shorts, 729
- vaxf\_to\_local, 729
- energy
  - IXMcrystalanalyser::IXTcrystalanalyser, 592
  - IXMfermi\_chopper::IXTfermi\_chopper, 618
- entry
  - IXMhistory::IXThistory, 625
- entry\_name
  - IXMbase::IXTbase, 588
- eof
  - IXMtools, 289
  - IXMunits\_utils, 306
- epsilon\_dp
  - IXMtype\_definitions, 296
- epsilon\_sp
  - IXMtype\_definitions, 296
- equal\_status
  - IXMstatus, 271
- err
  - IXMdatum::IXTdatum, 607
  - IXMtools, 289
  - IXMunits\_utils, 306
- err\_array
  - IXMtestclass::IXTtestclass, 678
- err\_list
  - IXMstatus::IXTstatus, 672
- err\_size
  - IXMstatus::IXTstatus, 672
- err\_top
  - IXMstatus::IXTstatus, 672
- error
  - IXMdataset\_1d::IXTdataset\_1d, 597
  - IXMdataset\_2d::IXTdataset\_2d, 599
  - IXMdataset\_3d::IXTdataset\_3d, 600
  - IXMdataset\_4d::IXTdataset\_4d, 603
  - IXMdatum\_array::IXTdatum\_array, 608
- euler\_dp
  - IXMtype\_definitions, 296
- euler\_sp
  - IXMtype\_definitions, 296
- exp
  - ieee\_double, 379
  - ieee\_single, 380
  - vax\_double, 713
  - vax\_single, 714
- external\_ptr
  - IXMmemory::IXTmemory\_info, 637
- f\_wrap\_char
  - IXMwrapped\_var, 315
- f\_wrap\_char1
  - IXMwrapped\_var::IXFwrap, 581
- f\_wrap\_dp
  - IXMwrapped\_var, 315
- f\_wrap\_dp1
  - IXMwrapped\_var::IXFwrap, 581
- f\_wrap\_dp2
  - IXMwrapped\_var::IXFwrap, 581
- f\_wrap\_dp3
  - IXMwrapped\_var::IXFwrap, 581
- f\_wrap\_dp4
  - IXMwrapped\_var::IXFwrap, 581
- f\_wrap\_i
  - IXMwrapped\_var, 315
- f\_wrap\_i1
  - IXMwrapped\_var::IXFwrap, 581
- f\_wrap\_i2
  - IXMwrapped\_var::IXFwrap, 581
- f\_wrap\_i3
  - IXMwrapped\_var::IXFwrap, 581
- f\_wrap\_i4
  - IXMwrapped\_var::IXFwrap, 581
- f\_wrap\_logval
  - IXMwrapped\_var, 315
- f\_wrap\_object
  - IXMwrapped\_var, 315
- facility
  - IXMstatus::IXTstatus\_condition, 674
- facility\_name
  - IXMsource::IXTsource, 669
- FASTGET\_INIT
  - IXMisis\_raw\_file.f90, 789
- FASTREAD\_DATA
  - IXMisis\_raw\_file.f90, 789
- fax
  - IXMuser::IXTuser, 683
- FERROR\_ADD
  - IXMisis\_raw\_file.f90, 790
- field
  - IXMoperation::IXTop\_get, 646
  - IXMoperation::IXTop\_set, 651
- fieldnameformat

- IXMoperation, 207
- file\_id
  - IXMfileio::IXTfileio, 620
  - NXUmodule, 369
- file\_name
  - IXMfileio::IXTfileio, 620
- file\_type
  - IXMinput\_source::IXTinput\_source, 626
- fileread
  - IXMoperation::IXToperation, 654
- filewrite
  - IXMoperation::IXToperation, 654
- finduseddetectors
  - IXMinstrument, 143
- findusedspectra
  - IXMinstrument, 143
- finish\_op\_dataset\_1d
  - IXMdataset\_1d, 50
- finish\_op\_dataset\_2d
  - IXMdataset\_2d, 61
- fio
  - IXMoperation::IXTop\_fileread, 644
  - IXMoperation::IXTop\_filewrite, 645
- FORT\_FILE
  - IXMisis\_raw\_file.f90, 790
- fort\_int
  - endian\_convert.h, 727
- fortran\_alloc
  - IXMmemory::IXTmemory\_info, 637
- FORTTRAN\_CALL
  - endian\_convert.h, 727
- found
  - IXMisis\_raw\_file::IXTisis\_raw\_file, 630
- fourpi\_dp
  - IXMtype\_definitions, 297
- fourpi\_sp
  - IXMtype\_definitions, 297
- frequency
  - IXMfermi\_chopper::IXTfermi\_chopper, 618
  - IXMsource::IXTsource, 669
- fwhh
  - IXMmoments::IXTmoments, 641
- g1
  - IXMmoments::IXTmoments, 641
- g2
  - IXMmoments::IXTmoments, 641
- g\_0
  - IXMneutron\_units, 192
- g\_1
  - IXMneutron\_units, 192
- g\_2
  - IXMneutron\_units, 192
- gamma
  - IXMlattice::IXTlattice, 633
- gas\_pressure
  - IXMdet\_he3::IXTdet\_he3, 609
- get
  - IXMoperation::IXToperation, 654
- GET\_CRPT\_SPECIALS
  - IXMisis\_raw\_file.f90, 790
- get\_emode
  - IXMchopper\_instrument, 33
  - IXMchopper\_instrument::IXFget\_emode, 461
  - IXMdiffracton\_instrument, 101
  - IXMdiffracton\_instrument::IXFget\_emode, 460
- get\_moments
  - IXMmoments\_utils, 186
- get\_ptr
  - IXMchopper\_instrument, 33
  - IXMchopper\_instrument::IXFget\_ptr, 464
  - IXMdiffracton\_instrument, 101
  - IXMdiffracton\_instrument::IXFget\_ptr, 463
- getd
  - IXMtools, 284
- GETDAT
  - IXMisis\_raw\_file.f90, 791
- getds
  - IXMtools, 284
- geti
  - IXMtools, 284
- geti\_1d
  - IXMbase, 25
  - IXMbase::IXFget\_integer\_array, 462
- geti\_2d
  - IXMbase, 25
  - IXMbase::IXFget\_integer\_array, 462
- getis
  - IXMtools, 285
- getlf
  - IXMtools, 285
- getlin
  - IXMtools, 285
- GETPARC
  - IXMisis\_raw\_file.f90, 791
- GETPARI
  - IXMisis\_raw\_file.f90, 791
- GETPARR
  - IXMisis\_raw\_file.f90, 792
- getr
  - IXMtools, 285
- getr\_1d
  - IXMbase, 25
  - IXMbase::IXFget\_real\_array, 468

- getr\_2d
  - IXMbase, 25
  - IXMbase::IXFget\_real\_array, 468
- getrs
  - IXMtools, 286
- GETRUN
  - IXMisis\_raw\_file.f90, 792
- GETSECT
  - IXMisis\_raw\_file.f90, 793
- global\_raw\_status
  - IXMisis\_raw\_file, 159
- gonio
  - IXMsample::IXTsample, 666
- good\_index
  - IXMeffdet\_index::IXTeffdet\_index, 616
- group\_index
  - IXMdetector::IXTdetector, 613
- group\_level
  - NXUmodule, 370
- hbar
  - IXMphysical\_constants, 221
- hbar\_mantissa
  - IXMphysical\_constants, 221
- height
  - IXMaperture::IXTaperture, 585
  - IXMcrystalanalyser::IXTcrystalanalyser, 592
  - IXMfermi\_chopper::IXTfermi\_chopper, 618
  - IXMmoderator::IXTmoderator, 639
  - IXMsample::IXTsample, 667
- homer\_message
  - IXMtools, 286
- horiz\_posn
  - IXMaperture::IXTaperture, 585
- i
  - IXMoperation, 207
  - IXMoperation::IXTop\_init, 648
  - IXMwrapped\_var::IXTwrapped\_var, 688
- i1
  - IXMwrapped\_var::IXTwrapped\_var, 688
- i1b
  - IXMtype\_definitions, 297
- i2
  - IXMwrapped\_var::IXTwrapped\_var, 688
- i2b
  - IXMtype\_definitions, 297
- i3
  - IXMwrapped\_var::IXTwrapped\_var, 688
- i4
  - IXMwrapped\_var::IXTwrapped\_var, 689
- i4b
  - IXMtype\_definitions, 297
- I5
  - IXMoperation, 207
- I\_inssor
  - m\_refsor, 324
- I\_mrgrnk
  - m\_mrgrnk::IXFrank, 524
- I\_nearless
  - m\_unirnk, 326
  - m\_unirnk::IXFunique\_rank, 565
- I\_refsor
  - m\_refsor, 324
- i\_refsor
  - m\_refsor::IXFsort, 542
- I\_subsor
  - m\_refsor, 324
- I\_unirnk
  - m\_unirnk, 326
- I\_valmed
  - m\_mrgrnk, 323
- i\_valmed
  - m\_mrgrnk::IXFrank, 524
- id
  - IXMgroup::IXTgroup, 622
- idelim
  - IXMtools, 286
- IEEE\_DBL\_BIAS
  - endian\_convert.c, 724
- ieee\_double, 379
  - exp, 379
  - mantissa1, 379
  - mantissa2, 379
  - sign, 379
- ieee\_double\_to\_local
  - endian\_convert.c, 725
  - endian\_convert.h, 727
- ieee\_float\_to\_local
  - endian\_convert.c, 725
  - endian\_convert.h, 727
- ieee\_single, 380
  - exp, 380
  - mantissa, 380
  - sign, 380
- IEEE\_SNG\_BIAS
  - endian\_convert.c, 724
- IEEEFP
  - endian\_convert.c, 724
- index\_byid
  - IXMgroups, 130
- index\_byname
  - IXMgroups, 130
- inext
  - IXMtools, 287
- init

- IXMoperation::IXToperation, 654
- initialised
  - IXMbase::IXTbase, 588
- initialiseOperation
  - IXMoperation, 198
- inner\_radius
  - IXMsample::IXTsample, 667
- inst
  - IXMrunfile::IXTrunfile, 663
- inst\_type
  - IXMinstrument::IXTinstrument, 628
- int\_arr
  - IXMtestclass::IXTtestclass, 678
- integral
  - IXMpeaks::IXTpeaks, 659
- integral\_units
  - IXMpeaks::IXTpeaks, 659
- integrate\_x\_arr\_dataset\_2d
  - IXMdataset\_2d, 61
  - IXMdataset\_2d::IXFintegrate\_x\_-dataset\_2d, 469
- integrate\_x\_dataset\_2d
  - IXMdataset\_2d, 61
  - IXMdataset\_2d::IXFintegrate\_x\_-dataset\_2d, 469
- intform
  - IXMoperation, 208
- inxtch
  - IXMtools, 287
- iprvch
  - IXMtools, 287
- irange\_high
  - IXMpeaks::IXTpeaks, 659
- irange\_low
  - IXMpeaks::IXTpeaks, 659
- IXBallocArrayDescriptor
  - bindings.f90, 719
  - IXMmemory, 180
- IXBcreateBindingFieldIfNeeded
  - bindings.f90, 719
- IXBcreateBindingPLHS
  - bindings.f90, 720
- IXBcreateClassArray
  - bindings.f90, 720
  - IXMoperation\_interfaces, 209
- IXBdeallocArrayDescriptor
  - bindings.f90, 720
- IXBexternalMakeResult
  - bindings.f90, 720
  - IXMmemory, 180
- IXBfileCloseGroup
  - IXMfileio, 117
- IXBfileMakeGroup
  - IXMfileio, 117
- IXBfileOpenGroup
  - IXMfileio, 117
- IXBfileReadAllocc1
  - IXMfileio::IXBfileReadAlloc, 386
- IXBfileReadAllocdp1
  - IXMfileio::IXBfileReadAlloc, 386
- IXBfileReadAllocdp2
  - IXMfileio::IXBfileReadAlloc, 386
- IXBfileReadAllocdp3
  - IXMfileio::IXBfileReadAlloc, 386
- IXBfileReadAllocdp4
  - IXMfileio::IXBfileReadAlloc, 386
- IXBfileReadAlloci4b1
  - IXMfileio::IXBfileReadAlloc, 386
- IXBfileReadAlloci4b2
  - IXMfileio::IXBfileReadAlloc, 386
- IXBfileReadAlloci4b3
  - IXMfileio::IXBfileReadAlloc, 386
- IXBfileReadAlloci4b4
  - IXMfileio::IXBfileReadAlloc, 386
- IXBfileReadc1
  - IXMfileio::IXBfileRead, 385
- IXBfileReadChar
  - IXMfileio, 117
  - IXMfileio::IXBfileRead, 384
- IXBfileReaddp1
  - IXMfileio::IXBfileRead, 384
- IXBfileReaddp2
  - IXMfileio::IXBfileRead, 385
- IXBfileReaddp3
  - IXMfileio::IXBfileRead, 385
- IXBfileReaddp4
  - IXMfileio::IXBfileRead, 385
- IXBfileReadi4b1
  - IXMfileio::IXBfileRead, 385
- IXBfileReadi4b2
  - IXMfileio::IXBfileRead, 385
- IXBfileReadi4b3
  - IXMfileio::IXBfileRead, 385
- IXBfileReadi4b4
  - IXMfileio::IXBfileRead, 385
- IXBfileReadInteger
  - IXMfileio, 118
  - IXMfileio::IXBfileRead, 384
- IXBfileReadLogical
  - IXMfileio, 118
  - IXMfileio::IXBfileRead, 384
- IXBfileReadPtrdp1
  - IXMfileio::IXBfileReadPtr, 387
- IXBfileReadPtrdp2
  - IXMfileio::IXBfileReadPtr, 387
- IXBfileReadPtrdp3
  - IXMfileio::IXBfileReadPtr, 387
- IXBfileReadPtrdp4
  - IXMfileio::IXBfileReadPtr, 387

- IXMfileio::IXBfileReadPtr, 387
- IXBfileReadPtri4b1
  - IXMfileio::IXBfileReadPtr, 387
- IXBfileReadPtri4b2
  - IXMfileio::IXBfileReadPtr, 387
- IXBfileReadPtri4b3
  - IXMfileio::IXBfileReadPtr, 387
- IXBfileReadPtri4b4
  - IXMfileio::IXBfileReadPtr, 387
- IXBfileReadReal
  - IXMfileio, 118
  - IXMfileio::IXBfileRead, 384
- IXBfileWritec1
  - IXMfileio::IXBfileWrite, 389
- IXBfileWriteChar
  - IXMfileio, 118
  - IXMfileio::IXBfileWrite, 388
- IXBfileWritedp1
  - IXMfileio::IXBfileWrite, 388
- IXBfileWritedp2
  - IXMfileio::IXBfileWrite, 389
- IXBfileWritedp3
  - IXMfileio::IXBfileWrite, 389
- IXBfileWritedp4
  - IXMfileio::IXBfileWrite, 389
- IXBfileWritei4b1
  - IXMfileio::IXBfileWrite, 389
- IXBfileWritei4b2
  - IXMfileio::IXBfileWrite, 389
- IXBfileWritei4b3
  - IXMfileio::IXBfileWrite, 389
- IXBfileWritei4b4
  - IXMfileio::IXBfileWrite, 389
- IXBfileWriteInteger
  - IXMfileio, 118
  - IXMfileio::IXBfileWrite, 388
- IXBfileWriteLogical
  - IXMfileio, 119
  - IXMfileio::IXBfileWrite, 388
- IXBfileWriteReal
  - IXMfileio, 119
  - IXMfileio::IXBfileWrite, 388
- IXBfindGroup
  - IXMfileio, 119
- IXBgetArrayData
  - bindings.f90, 720
- IXBgetArraydata
  - IXMmemory, 180
- IXBgetFieldFromBinding
  - bindings.f90, 721
- IXBgetNumberOfElements
  - bindings.f90, 721
  - IXMoperation\_interfaces, 209
- IXBsendFieldToBinding
  - bindings.f90, 721
- IXBwrite\_line
  - bindings.f90, 721
- IXC\_CREATE
  - IXMfileio, 121
- IXC\_CREATEXML
  - IXMfileio, 121
- IXC\_RDWR
  - IXMfileio, 121
- IXC\_READ
  - IXMfileio, 121
- IXC\_WRITE
  - IXMfileio, 121
- IXCbox
  - IXMshape, 259
- IXCchop\_inst
  - IXMbase, 27
- IXCcode\_e1
  - IXMneutron\_units, 192
- IXCcode\_e2
  - IXMneutron\_units, 192
- IXCcode\_k1
  - IXMneutron\_units, 192
- IXCcode\_k2
  - IXMneutron\_units, 192
- IXCcode\_lam1
  - IXMneutron\_units, 192
- IXCcode\_lam2
  - IXMneutron\_units, 193
- IXCcode\_q
  - IXMneutron\_units, 193
- IXCcode\_qminus
  - IXMneutron\_units, 193
- IXCcode\_qplus
  - IXMneutron\_units, 193
- IXCcode\_t
  - IXMneutron\_units, 193
- IXCcode\_tau
  - IXMneutron\_units, 193
- IXCcode\_tau1
  - IXMneutron\_units, 193
- IXCcode\_tau2
  - IXMneutron\_units, 193
- IXCcode\_thz
  - IXMneutron\_units, 193
- IXCcode\_v
  - IXMneutron\_units, 193
- IXCcode\_v1
  - IXMneutron\_units, 193
- IXCcode\_v2
  - IXMneutron\_units, 194
- IXCcode\_w
  - IXMneutron\_units, 194
- IXCcode\_wn

- IXMneutron\_units, 194
- IXCcomline\_initlength
  - IXMrunfile, 245
- IXCcommand\_line
  - IXMbase, 27
- IXCcountsC
  - IXMneutron\_units, 194
- IXCcountsU
  - IXMneutron\_units, 194
- IXCcylinder
  - IXMshape, 259
- IXCcylindrical\_polar
  - IXMmaths\_projection, 176
- IXCdetmap
  - IXMbase, 27
- IXCdetmask
  - IXMbase, 27
- IXCdiff\_inst
  - IXMbase, 28
- IXCdiffraction
  - IXMbase, 28
- IXCdirect
  - IXMbase, 28
- IXCdso\_initlength
  - IXMdata\_source, 48
- IXCerr\_filenotfound
  - IXMerrorcodes, 108
- IXCerr\_invparam
  - IXMerrorcodes, 108
- IXCerr\_max\_name\_len
  - IXMerrorcodes, 108
- IXCerr\_names
  - IXMerrorcodes, 108
- IXCerr\_outofmem
  - IXMerrorcodes, 108
- IXCerr\_unknown
  - IXMerrorcodes, 108
- IXCfacility\_bindings
  - IXMerrorcodes, 108
- IXCfacility\_file
  - IXMerrorcodes, 109
- IXCfacility\_libisis
  - IXMerrorcodes, 109
- IXCfacility\_max\_name\_len
  - IXMerrorcodes, 109
- IXCfacility\_memory
  - IXMerrorcodes, 109
- IXCfacility\_names
  - IXMerrorcodes, 109
- IXCfacility\_none
  - IXMerrorcodes, 109
- IXCfacility\_wrapvar
  - IXMerrorcodes, 109
- IXCfermi\_chopper
  - IXMbase, 28
- IXCfile\_type\_ascii
  - IXMfileio, 121
- IXCfile\_type\_binary
  - IXMfileio, 122
- IXChist\_initlength
  - IXMhistory, 138
- IXCholcyl
  - IXMshape, 259
- IXCindi\_inst
  - IXMbase, 28
- IXCindirect
  - IXMbase, 28
- IXCinvalid\_id\_group
  - IXMgroup, 129
- IXCmapfile
  - IXMbase, 28
- IXCmaskfile
  - IXMbase, 28
- IXCmemory\_buckets
  - IXMmemory, 180
- IXCmemory\_stack\_size
  - IXMlibcore, 163
- IXCmoderator
  - IXMbase, 28
- IXCmonmap
  - IXMbase, 28
- IXCmonmask
  - IXMbase, 29
- IXCno\_parent\_group
  - IXMgroup, 129
- IXCnullcode
  - IXMneutron\_units, 194
- IXCnullunits
  - IXMneutron\_units, 194
- IXCobject\_initialised
  - IXMbase, 29
- IXCplanar
  - IXMmaths\_projection, 176
- IXCpoint
  - IXMshape, 259
- IXCpolar
  - IXMmaths\_projection, 176
- IXCpolygon
  - IXMshape, 260
- IXCprogname
  - IXMbase, 29
- IXCrawfile
  - IXMbase, 29
- IXCseverity\_debug
  - IXMstatus, 272
- IXCseverity\_error
  - IXMstatus, 272
- IXCseverity\_fatal

- IXMstatus, 273
- IXCseverity\_info
  - IXMstatus, 273
- IXCseverity\_names
  - IXMstatus, 273
- IXCseverity\_ok
  - IXMstatus, 273
- IXCseverity\_warning
  - IXMstatus, 273
- IXCsource
  - IXMbase, 29
- IXCspecnoC
  - IXMneutron\_units, 194
- IXCspecnoU
  - IXMneutron\_units, 194
- IXCsphere
  - IXMshape, 260
- IXCspherical\_polar
  - IXMmaths\_projection, 176
- IXCtype\_isisraw
  - IXMinput\_source, 142
- IXCtype\_nexus
  - IXMinput\_source, 142
- IXCtype\_unknown
  - IXMinput\_source, 142
- IXCundef\_char
  - IXMtype\_definitions, 297
- IXCundef\_dp
  - IXMtype\_definitions, 297
- IXCundef\_i4b
  - IXMtype\_definitions, 297
- IXCundef\_logical
  - IXMtype\_definitions, 297
- IXCundef\_sp
  - IXMtype\_definitions, 298
- IXCunit\_microsecond
  - IXMneutron\_units, 194
- IXCvartype\_char
  - IXMwrapped\_var, 317
- IXCvartype\_char1
  - IXMwrapped\_var, 317
- IXCvartype\_dp
  - IXMwrapped\_var, 317
- IXCvartype\_dp1
  - IXMwrapped\_var, 317
- IXCvartype\_dp2
  - IXMwrapped\_var, 317
- IXCvartype\_dp3
  - IXMwrapped\_var, 317
- IXCvartype\_dp4
  - IXMwrapped\_var, 317
- IXCvartype\_i
  - IXMwrapped\_var, 317
- IXCvartype\_il
  - IXMwrapped\_var, 317
- IXCvartype\_i2
  - IXMwrapped\_var, 318
- IXCvartype\_i3
  - IXMwrapped\_var, 318
- IXCvartype\_i4
  - IXMwrapped\_var, 318
- IXCvartype\_logical
  - IXMwrapped\_var, 318
- IXCvartype\_object
  - IXMwrapped\_var, 318
- IXCvartype\_unknown
  - IXMwrapped\_var, 318
- IXCworknoC
  - IXMneutron\_units, 194
- IXCworknoU
  - IXMneutron\_units, 195
- IXD\_CHECK
  - IXMoperation.f90, 811
- IXD\_DESCRIPTION
  - IXMaperature.f90, 730
  - IXMattenuator.f90, 731
  - IXMbridge.f90, 735
  - IXMchopper\_instrument.f90, 737
  - IXMdata.f90, 740
  - IXMdataset\_1d.f90, 745
  - IXMdataset\_2d.f90, 751
  - IXMdataset\_3d.f90, 752
  - IXMdataset\_4d.f90, 753
  - IXMdatum.f90, 757
  - IXMdatum\_array.f90, 761
  - IXMdet\_he3.f90, 762
  - IXMdet\_solid.f90, 763
  - IXMdetector.f90, 765
  - IXMdiffraction\_instrument.f90, 767
  - IXMeffdet\_index.f90, 769
  - IXMfermi\_chopper.f90, 771
  - IXMgeometry.f90, 776
  - IXMgroup.f90, 778
  - IXMgroups.f90, 780
  - IXMinput\_source.f90, 783
  - IXMinstrument.f90, 785
  - IXMisis\_raw\_file.f90, 788
  - IXMlattice.f90, 796
  - IXMmap.f90, 798
  - IXMmask.f90, 800
  - IXMmoderator.f90, 802
  - IXMmoments.f90, 803
  - IXMoptions.f90, 816
  - IXMorientation.f90, 818
  - IXMpeaks.f90, 820
  - IXMrunfile.f90, 822
  - IXMsample.f90, 824
  - IXMshape.f90, 826

- IXMsource.f90, 827
- IXMspectra.f90, 829
- IXMsw\_bridge.f90, 831
- IXMtestclass.f90, 833
- IXMtranslation.f90, 835
- IXMunits.f90, 836
- IXMuser.f90, 837
- IXMworkspace.f90, 839
- IXMws\_bridge.f90, 844
- IXD\_DIM
  - IXMdataset\_2d.f90, 751
- IXD\_DIMS
  - bindings.f90, 719
  - IXMarraymanips.f90, 852
  - IXMdataset\_1d.f90, 745
  - IXMdataset\_2d.f90, 751
  - IXMfileio.f90, 774
  - IXMmemory.f90, 867
  - IXMoperation.f90, 811
  - IXMoperation\_interfaces.f90, 815
  - IXMwrappedvar.f90, 842
- IXD\_DIMXY
  - IXMdataset\_2d.f90, 751
- IXD\_FORMAT
  - IXMoperation.f90, 811
- IXD\_FTYPE
  - IXMmemory.f90, 867
- IXD\_FTYPE\_FIXED
  - IXMmemory.f90, 867
- IXD\_FTYPE\_TEMP
  - IXMmemory.f90, 867
- IXD\_INITIALISE
  - IXMoperation.f90, 811
- IXD\_MTYPE
  - IXMmemory.f90, 867
- IXD\_NAME
  - bindings.f90, 719
  - IXMarraymanips.f90, 852
  - IXMdataset\_1d.f90, 745
  - IXMdataset\_2d.f90, 751
  - IXMdatum\_array.f90, 761
  - IXMfileio.f90, 774
  - IXMmemory.f90, 867
  - IXMoperation.f90, 811
  - IXMoperation\_interfaces.f90, 815
  - IXMwrappedvar.f90, 842
- IXD\_NDIMS
  - IXMmemory.f90, 867
- IXD\_NO\_BASE
  - IXMbase.f90, 733
  - IXMdatum.f90, 757
  - IXMgeometry.f90, 776
  - IXMisis\_raw\_file.f90, 788
  - IXMshape.f90, 826
- IXD\_NULL
  - IXMmemory.f90, 867
- IXD\_NUMPRINT
  - IXMoperation.f90, 811
- IXD\_OPERATION
  - IXMdataset\_1d.f90, 745
  - IXMdataset\_2d.f90, 751
  - IXMdatum\_array.f90, 761
- IXD\_PM
  - IXMarraymanips.f90, 852
- IXD\_PREFIX
  - IXMoperation.f90, 811
- IXD\_QUALIFIER
  - IXMoperation.f90, 811
- IXD\_SQTYPE
  - IXMaperture.f90, 730
  - IXMattenuator.f90, 731
  - IXMbase.f90, 733
  - IXMbridge.f90, 735
  - IXMchopper\_instrument.f90, 737
  - IXMdata.f90, 740
  - IXMdataset\_1d.f90, 745
  - IXMdataset\_2d.f90, 751
  - IXMdataset\_3d.f90, 752
  - IXMdataset\_4d.f90, 753
  - IXMdatum.f90, 757
  - IXMdatum\_array.f90, 761
  - IXMdet\_he3.f90, 762
  - IXMdet\_solid.f90, 763
  - IXMdetector.f90, 765
  - IXMdiffracton\_instrument.f90, 767
  - IXMeffdet\_index.f90, 769
  - IXMfermi\_chopper.f90, 771
  - IXMgeometry.f90, 776
  - IXMgroup.f90, 778
  - IXMgroups.f90, 780
  - IXMinput\_source.f90, 783
  - IXMinstrument.f90, 785
  - IXMisis\_raw\_file.f90, 788
  - IXMlattice.f90, 796
  - IXMmap.f90, 798
  - IXMmask.f90, 800
  - IXMmoderator.f90, 802
  - IXMmoments.f90, 803
  - IXMoptions.f90, 816
  - IXMorientation.f90, 818
  - IXMpeaks.f90, 820
  - IXMrunfile.f90, 822
  - IXMsample.f90, 824
  - IXMshape.f90, 826
  - IXMsource.f90, 827
  - IXMspectra.f90, 829
  - IXMsw\_bridge.f90, 831
  - IXMtestclass.f90, 833



- IXMtranslation.f90, 835
- IXMunits.f90, 836
- IXMuser.f90, 837
- IXMworkspace.f90, 839
- IXMws\_bridge.f90, 844
- IXD\_STACK
- IXMmemory.f90, 867
- IXD\_TD
- IXMarraymanips.f90, 852
- IXD\_TYPE
- bindings.f90, 719
- IXMaperture.f90, 730
- IXMattenuator.f90, 731
- IXMbase.f90, 733
- IXMbridge.f90, 735
- IXMchopper\_instrument.f90, 737
- IXMdata.f90, 740
- IXMdataset\_1d.f90, 745
- IXMdataset\_2d.f90, 751
- IXMdataset\_3d.f90, 752
- IXMdataset\_4d.f90, 753
- IXMdatum.f90, 757
- IXMdatum\_array.f90, 761
- IXMdet\_he3.f90, 762
- IXMdet\_solid.f90, 763
- IXMdetector.f90, 765
- IXMdiffraction\_instrument.f90, 767
- IXMeffdet\_index.f90, 769
- IXMfermi\_chopper.f90, 771
- IXMfileio.f90, 774
- IXMgeometry.f90, 776
- IXMgroup.f90, 778
- IXMgroups.f90, 780
- IXMinput\_source.f90, 783
- IXMinstrument.f90, 785
- IXMisis\_raw\_file.f90, 788
- IXMlattice.f90, 796
- IXMmap.f90, 798
- IXMmask.f90, 800
- IXMmoderator.f90, 802
- IXMmoments.f90, 803
- IXMoperation.f90, 811
- IXMoperation\_interfaces.f90, 815
- IXMoptions.f90, 816
- IXMorientation.f90, 818
- IXMpeaks.f90, 820
- IXMrunfile.f90, 822
- IXMsample.f90, 824
- IXMshape.f90, 826
- IXMsource.f90, 827
- IXMspectra.f90, 829
- IXMsw\_bridge.f90, 831
- IXMtestclass.f90, 833
- IXMtranslation.f90, 835
- IXMunits.f90, 836
- IXMuser.f90, 837
- IXMworkspace.f90, 839
- IXMwrappedvar.f90, 842
- IXMws\_bridge.f90, 844
- IXD\_TYPE\_TEMP
- IXMfileio.f90, 774
- IXD\_UNDEF
- IXMoperation.f90, 811
- IXFadd\_groups
- IXMgroups, 131
- IXFadditem\_data\_source
- IXMdata\_source, 45
- IXFadditem\_history
- IXMhistory, 136
- IXFalloc\_section\_detector
- IXMdetector, 95
- IXFarea\_vertices\_box
- IXMshape, 251
- IXFarea\_vertices\_cylinder
- IXMshape, 251
- IXFarea\_vertices\_geometry
- IXMgeometry, 123
- IXFarea\_vertices\_holcyl
- IXMshape, 251
- IXFarea\_vertices\_point
- IXMshape, 251
- IXFarea\_vertices\_polygon
- IXMshape, 251
- IXFarea\_vertices\_shape
- IXMshape, 252
- IXFarea\_vertices\_sphere
- IXMshape, 252
- IXFarray\_X\_divide\_dataset\_2d
- IXMdataset\_2d::IXFdivide\_X, 443
- IXMdataset\_2d::IXFdivide\_X\_dataset\_-  
2d, 444
- IXFarray\_X\_minus\_dataset\_2d
- IXMdataset\_2d::IXFminus\_X, 485
- IXMdataset\_2d::IXFminus\_X\_dataset\_-  
2d, 486
- IXFarray\_X\_plus\_dataset\_2d
- IXMdataset\_2d::IXFplus\_X, 510
- IXMdataset\_2d::IXFplus\_X\_dataset\_2d,  
511
- IXFarray\_X\_times\_dataset\_2d
- IXMdataset\_2d::IXFtimes\_X, 559
- IXMdataset\_2d::IXFtimes\_X\_dataset\_-  
2d, 560
- IXFarray\_Y\_divide\_dataset\_2d
- IXMdataset\_2d::IXFdivide\_Y, 445
- IXMdataset\_2d::IXFdivide\_Y\_dataset\_-  
2d, 446
- IXFarray\_Y\_minus\_dataset\_2d

- IXMdataset\_2d::IXFminus\_Y, 487
- IXMdataset\_2d::IXFminus\_Y\_dataset\_-  
2d, 488
- IXFarray\_Y\_plus\_dataset\_2d
  - IXMdataset\_2d::IXFplus\_Y, 512
  - IXMdataset\_2d::IXFplus\_Y\_dataset\_2d,  
513
- IXFarray\_Y\_times\_dataset\_2d
  - IXMdataset\_2d::IXFtimes\_Y, 561
  - IXMdataset\_2d::IXFtimes\_Y\_dataset\_-  
2d, 562
- IXFaverage\_detector
  - IXMdetector, 95
- IXFavgdeadtime\_detector
  - IXMdetector, 95
- IXFavgdelaytime\_detector
  - IXMdetector, 95
- IXFavgL2\_detector
  - IXMdetector, 96
- IXFavgphi\_detector
  - IXMdetector, 96
- IXFavgtheta\_detector
  - IXMdetector, 96
- IXFbackground\_data
  - IXMdata, 37
- IXFbackground\_runfile
  - IXMrunfile, 234
- IXFcatarray\_dataset\_1d
  - IXMdataset\_1d, 50
- IXFcharge\_norm\_runfile
  - IXMrunfile, 234
- IXFcheck\_aperture
  - IXMaperture, 17
- IXFcheck\_array\_data\_source
  - IXMdata\_source, 45
  - IXMdata\_source::IXFcheck, 415
- IXFcheck\_array\_fileio
  - IXMoperation, 198
  - IXMoperation::IXFcheck, 417
- IXFcheck\_array\_history
  - IXMhistory, 136
  - IXMhistory::IXFcheck, 416
- IXFcheck\_attenuator
  - IXMattenuator, 22
- IXFcheck\_base
  - IXMbase, 25
- IXFcheck\_box
  - IXMshape, 252
- IXFcheck\_bridge
  - IXMbridge, 30
- IXFcheck\_chopper\_instrument
  - IXMchopper\_instrument, 33
- IXFcheck\_cylinder
  - IXMshape, 252
- IXFcheck\_data
  - IXMdata, 37
- IXFcheck\_data\_source
  - IXMdata\_source, 45
  - IXMdata\_source::IXFcheck, 415
- IXFcheck\_dataset\_1d
  - IXMdataset\_1d, 50
- IXFcheck\_dataset\_2d
  - IXMdataset\_2d, 62
- IXFcheck\_dataset\_3d
  - IXMdataset\_3d, 77
- IXFcheck\_dataset\_4d
  - IXMdataset\_4d, 79
- IXFcheck\_datum
  - IXMdatum, 83
- IXFcheck\_datum\_array
  - IXMdatum\_array, 86
- IXFcheck\_det\_he3
  - IXMdet\_he3, 90
- IXFcheck\_det\_solid
  - IXMdet\_solid, 92
- IXFcheck\_detector
  - IXMdetector, 96
- IXFcheck\_diffraction\_instrument
  - IXMdiffraction\_instrument, 101
- IXFcheck\_effdet\_index
  - IXMeffdet\_index, 104
- IXFcheck\_Fermi\_chopper
  - IXMfermi\_chopper, 110
- IXFcheck\_fileio
  - IXMoperation, 198
  - IXMoperation::IXFcheck, 417
- IXFcheck\_geometry
  - IXMgeometry, 123
- IXFcheck\_group
  - IXMgroup, 128
- IXFcheck\_groups
  - IXMgroups, 131
- IXFcheck\_history
  - IXMhistory, 136
  - IXMhistory::IXFcheck, 416
- IXFcheck\_holcyl
  - IXMshape, 253
- IXFcheck\_input\_source
  - IXMinput\_source, 140
- IXFcheck\_instrument
  - IXMinstrument, 144
- IXFcheck\_ISIS\_Raw\_File
  - IXMisis\_raw\_file, 151
- IXFcheck\_lattice
  - IXMlattice, 160
- IXFcheck\_map
  - IXMmap, 164
- IXFcheck\_mask

- IXMmask, 169
- IXFcheck\_moderator
  - IXMmoderator, 181
- IXFcheck\_moments
  - IXMmoments, 184
- IXFcheck\_options
  - IXMoptions, 210
- IXFcheck\_orientation
  - IXMorientation, 212
- IXFcheck\_peaks
  - IXMpeaks, 218
- IXFcheck\_point
  - IXMshape, 253
- IXFcheck\_polygon
  - IXMshape, 253
- IXFcheck\_runfile
  - IXMrunfile, 234
- IXFcheck\_sample
  - IXMsample, 246
- IXFcheck\_shape
  - IXMshape, 253
- IXFcheck\_source
  - IXMsource, 263
- IXFcheck\_spectra
  - IXMspectra, 265
- IXFcheck\_sphere
  - IXMshape, 254
- IXFcheck\_subsid\_ws\_bridge
  - IXMws\_bridge, 319
- IXFcheck\_sw\_bridge
  - IXMsw\_bridge, 274
- IXFcheck\_Testclass
  - IXMtestclass, 277
- IXFcheck\_translation
  - IXMtranslation, 291
- IXFcheck\_units
  - IXMunits, 301
- IXFcheck\_user
  - IXMuser, 309
- IXFcheck\_workspace
  - IXMworkspace, 311
- IXFcheck\_ws\_bridge
  - IXMws\_bridge, 319
- IXFclear\_valid\_base
  - IXMbase, 25
- IXFcombine\_orientation
  - IXMorientation, 212
- IXFcompare\_bridge
  - IXMbridge, 30
- IXFcompare\_instrument
  - IXMinstrument, 144
- IXFcompare\_runfile
  - IXMrunfile, 234
- IXFcompare\_spectra
  - IXMspectra, 265
- IXFcompare\_units
  - IXMunits, 301
- IXFcompare\_ws\_bridge
  - IXMws\_bridge, 319
- IXFcomparebridge\_data
  - IXMdata, 38
- IXFcontract\_arrayd2d\_dataset\_2d
  - IXMdataset\_2d, 62
- IXFcos
  - IXMmaths\_basis, 173
- IXFcos\_dataset\_1d
  - IXMdataset\_1d::IXFcos, 421
- IXFcos\_dataset\_2d
  - IXMdataset\_2d::IXFcos, 423
- IXFcos\_Datum
  - IXMdatum, 83
- IXFcos\_datum
  - IXMdatum::IXFcos, 424
- IXFcos\_datum\_array
  - IXMdatum\_array::IXFcos, 420
- IXFcosh\_dataset\_1d
  - IXMdataset\_1d::IXFcosh, 426
- IXFcosh\_dataset\_2d
  - IXMdataset\_2d::IXFcosh, 427
- IXFcosh\_Datum
  - IXMdatum, 84
- IXFcosh\_datum
  - IXMdatum::IXFcosh, 428
- IXFcosh\_datum\_array
  - IXMdatum\_array::IXFcosh, 425
- IXFcreate\_aperture
  - IXMaperture, 17
- IXFcreate\_attenuator
  - IXMattenuator, 22
- IXFcreate\_attributes\_geometry
  - IXMgeometry, 124
- IXFcreate\_base
  - IXMbase, 25
- IXFcreate\_bridge
  - IXMbridge, 30
- IXFcreate\_chopper\_instrument
  - IXMchopper\_instrument, 34
- IXFcreate\_class\_geometry
  - IXMgeometry, 124
- IXFcreate\_class\_orientation
  - IXMorientation, 213
- IXFcreate\_class\_orientation
  - IXMorientation::IXFcreate, 429
- IXFcreate\_code\_units
  - IXMunits, 301
- IXFcreate\_data
  - IXMdata, 38
- IXFcreate\_data\_source
  - IXMdata\_source, 46

- IXFcreate\_dataset\_1d
  - IXMdataset\_1d, 51
- IXFcreate\_dataset\_2d
  - IXMdataset\_2d, 62
- IXFcreate\_dataset\_3d
  - IXMdataset\_3d, 77
- IXFcreate\_dataset\_4d
  - IXMdataset\_4d, 79
- IXFcreate\_datum
  - IXMdatum, 84
- IXFcreate\_datum\_array
  - IXMdatum\_array, 86
- IXFcreate\_det\_he3
  - IXMdet\_he3, 90
- IXFcreate\_det\_solid
  - IXMdet\_solid, 92
- IXFcreate\_detector
  - IXMdetector, 97
- IXFcreate\_diffraction\_instrument
  - IXMdiffraction\_instrument, 101
- IXFcreate\_effdet\_index
  - IXMeffdet\_index, 104
- IXFcreate\_Fermi\_chopper
  - IXMfermi\_chopper, 110
- IXFcreate\_full\_units
  - IXMunits, 301
- IXFcreate\_geometry
  - IXMgeometry, 124
- IXFcreate\_group
  - IXMgroup, 128
- IXFcreate\_groups
  - IXMgroups, 131
- IXFcreate\_history
  - IXMhistory, 136
- IXFcreate\_input\_source
  - IXMinput\_source, 140
- IXFcreate\_instrument
  - IXMinstrument, 144
- IXFcreate\_ISIS\_Raw\_File
  - IXMisis\_raw\_file, 151
- IXFcreate\_lattice
  - IXMlattice, 160
- IXFcreate\_map
  - IXMmap, 164
- IXFcreate\_mask
  - IXMmask, 169
- IXFcreate\_moderator
  - IXMmoderator, 181
- IXFcreate\_moments
  - IXMmoments, 184
- IXFcreate\_options
  - IXMoptions, 210
- IXFcreate\_orientation
  - IXMorientation, 213
- IXFcreate\_peaks
  - IXMpeaks, 218
- IXFcreate\_runfile
  - IXMrunfile, 234
- IXFcreate\_sample
  - IXMsample, 246
- IXFcreate\_shape
  - IXMshape, 254
- IXFcreate\_source
  - IXMsource, 263
- IXFcreate\_special\_testclass
  - IXMtestclass, 277
  - IXMtestclass::IXFcreate, 430
- IXFcreate\_spectra
  - IXMspectra, 265
- IXFcreate\_sw\_bridge
  - IXMsw\_bridge, 274
- IXFCreate\_testclass
  - IXMtestclass, 277
- IXFcreate\_translation
  - IXMtranslation, 291
- IXFcreate\_units
  - IXMunits, 302
- IXFcreate\_user
  - IXMuser, 309
- IXFcreate\_workspace
  - IXMworkspace, 311
- IXFcreate\_ws\_bridge
  - IXMws\_bridge, 320
- IXFcreatebinfac\_D1
  - IXMarraymanips, 20
- IXFcreatebinfac\_D2
  - IXMarraymanips, 20
- IXFcreatePfac\_D1
  - IXMarraymanips, 21
- IXFcreatePfac\_D2
  - IXMarraymanips, 21
- IXFcreatexye\_dataset\_1d
  - IXMdataset\_1d, 51
- IXFcreatexyze\_dataset\_2d
  - IXMdataset\_2d, 63
- IXFcross
  - IXMmaths\_basis, 173
- IXFcross\_translation
  - IXMtranslation, 292
- IXFdataset\_1d\_X\_divide\_dataset\_2d
  - IXMdataset\_2d::IXFdivide\_X, 443
  - IXMdataset\_2d::IXFdivide\_X\_dataset\_2d, 444
- IXFdataset\_1d\_X\_minus\_dataset\_2d
  - IXMdataset\_2d::IXFminus\_X, 485
  - IXMdataset\_2d::IXFminus\_X\_dataset\_2d, 486
- IXFdataset\_1d\_X\_plus\_dataset\_2d

- IXMdataset\_2d::IXFplus\_X, 510
- IXMdataset\_2d::IXFplus\_X\_dataset\_2d, 511
- IXFdataset\_1d\_X\_times\_dataset\_2d
  - IXMdataset\_2d::IXFtimes\_X, 559
  - IXMdataset\_2d::IXFtimes\_X\_dataset\_2d, 560
- IXFdataset\_1d\_Y\_divide\_dataset\_2d
  - IXMdataset\_2d::IXFdivide\_Y, 445
  - IXMdataset\_2d::IXFdivide\_Y\_dataset\_2d, 446
- IXFdataset\_1d\_Y\_minus\_dataset\_2d
  - IXMdataset\_2d::IXFminus\_Y, 487
  - IXMdataset\_2d::IXFminus\_Y\_dataset\_2d, 488
- IXFdataset\_1d\_Y\_plus\_dataset\_2d
  - IXMdataset\_2d::IXFplus\_Y, 512
  - IXMdataset\_2d::IXFplus\_Y\_dataset\_2d, 513
- IXFdataset\_1d\_Y\_times\_dataset\_2d
  - IXMdataset\_2d::IXFtimes\_Y, 561
  - IXMdataset\_2d::IXFtimes\_Y\_dataset\_2d, 562
- IXFdataset\_1dPlusAAop
  - IXMdataset\_1d, 51
- IXFdecreef\_detector
  - IXMdetector, 97
- IXFdelitem\_data\_source
  - IXMdata\_source, 46
- IXFderiv1\_dataset\_1d
  - IXMdataset\_1d, 51
- IXFderiv1x\_dataset\_2d
  - IXMdataset\_2d, 63
- IXFderiv1y\_dataset\_2d
  - IXMdataset\_2d, 63
- IXFderiv2\_dataset\_1d
  - IXMdataset\_1d, 52
- IXFderiv2x\_dataset\_2d
  - IXMdataset\_2d, 64
- IXFderiv2y\_dataset\_2d
  - IXMdataset\_2d, 64
- IXFderiv\_1\_1d
  - IXMderivative, 89
- IXFderiv\_2\_1d
  - IXMderivative, 89
- IXFdestroy\_aperture
  - IXMmaperture, 18
- IXFdestroy\_attenuator
  - IXMattenuator, 22
- IXFdestroy\_base
  - IXMbase, 25
- IXFdestroy\_bridge
  - IXMbridge, 31
- IXFdestroy\_chopper\_instrument
  - IXMchopper\_instrument, 34
- IXFdestroy\_data
  - IXMdata, 38
- IXFdestroy\_data\_source
  - IXMdata\_source, 46
- IXFdestroy\_dataset\_1d
  - IXMdataset\_1d, 52
- IXFdestroy\_dataset\_2d
  - IXMdataset\_2d, 65
- IXFdestroy\_dataset\_3d
  - IXMdataset\_3d, 77
- IXFdestroy\_dataset\_4d
  - IXMdataset\_4d, 79
- IXFdestroy\_datum
  - IXMdatum, 84
- IXFdestroy\_datum\_array
  - IXMdatum\_array, 87
- IXFdestroy\_det\_he3
  - IXMdet\_he3, 90
- IXFdestroy\_det\_solid
  - IXMdet\_solid, 92
- IXFdestroy\_detector
  - IXMdetector, 97
- IXFdestroy\_diffraction\_instrument
  - IXMdiffracton\_instrument, 102
- IXFdestroy\_effdet\_index
  - IXMeffdet\_index, 104
- IXFdestroy\_fermi\_chopper
  - IXMfermi\_chopper, 111
- IXFdestroy\_geometry
  - IXMgeometry, 125
- IXFdestroy\_group
  - IXMgroup, 128
- IXFdestroy\_groups
  - IXMgroups, 131
- IXFdestroy\_history
  - IXMhistory, 137
- IXFdestroy\_input\_source
  - IXMinput\_source, 140
- IXFdestroy\_instrument
  - IXMinstrument, 144
- IXFdestroy\_isis\_raw\_file
  - IXMisis\_raw\_file, 152
- IXFdestroy\_lattice
  - IXMlattice, 160
- IXFdestroy\_map
  - IXMmap, 165
- IXFdestroy\_mask
  - IXMmask, 169
- IXFdestroy\_moderator
  - IXMmoderator, 182
- IXFdestroy\_moments
  - IXMmoments, 184
- IXFdestroy\_options

- IXMoptions, 210
- IXFdestroy\_orientation
  - IXMorientation, 213
- IXFdestroy\_peaks
  - IXMpeaks, 218
- IXFdestroy\_runfile
  - IXMrunfile, 235
- IXFdestroy\_sample
  - IXMsample, 247
- IXFdestroy\_shape
  - IXMshape, 254
- IXFdestroy\_source
  - IXMsource, 263
- IXFdestroy\_spectra
  - IXMspectra, 266
- IXFdestroy\_sw\_bridge
  - IXMsw\_bridge, 275
- IXFdestroy\_testclass
  - IXMtestclass, 278
- IXFdestroy\_translation
  - IXMtranslation, 292
- IXFdestroy\_units
  - IXMunits, 302
- IXFdestroy\_user
  - IXMuser, 309
- IXFdestroy\_workspace
  - IXMworkspace, 311
- IXFdestroy\_ws\_bridge
  - IXMws\_bridge, 320
- IXFdifference\_orientation
  - IXMorientation, 213
- IXFdisplay\_array\_data\_source
  - IXMoperation, 198
  - IXMoperation::IXFdisplay, 433
- IXFdisplay\_array\_fileio
  - IXMoperation, 199
  - IXMoperation::IXFdisplay, 433
- IXFdisplay\_array\_history
  - IXMoperation, 199
  - IXMoperation::IXFdisplay, 433
- IXFdisplay\_data\_source
  - IXMoperation, 199
  - IXMoperation::IXFdisplay, 433
- IXFdisplay\_fileio
  - IXMoperation, 199
  - IXMoperation::IXFdisplay, 433
- IXFdisplay\_history
  - IXMoperation, 199
  - IXMoperation::IXFdisplay, 433
- IXFdot
  - IXMmaths\_basis, 173
- IXFdot\_translation
  - IXMtranslation, 292
- IXFeffic\_dataset\_2d
  - IXMdataset\_2d, 65
- IXFeffic\_norm\_runfile
  - IXMrunfile, 235
- IXFei\_info\_instrument
  - IXMinstrument, 144
- IXFexp\_dataset\_1d
  - IXMdataset\_1d::IXFexp, 450
- IXFexp\_dataset\_2d
  - IXMdataset\_2d::IXFexp, 451
- IXFexp\_datum
  - IXMdatum, 84
- IXFexp\_datum
  - IXMdatum::IXFexp, 452
- IXFexp\_datum\_array
  - IXMdatum\_array::IXFexp, 449
- IXFexpand\_arrayd1d\_dataset\_2d
  - IXMdataset\_2d, 65
- IXFexpand\_arrayd2d\_dataset\_2d
  - IXMdataset\_2d, 65
- IXFfile\_check\_type
  - IXMfileio, 120
  - IXMfileio::IXFfile\_type, 456
- IXFfile\_close
  - IXMfileio, 120
- IXFfile\_get\_type
  - IXMfileio, 120
- IXFfile\_op
  - IXMoperation, 200
- IXFfile\_open
  - IXMfileio, 120
- IXFfile\_read\_data\_source
  - IXMdata\_source, 46
  - IXMdata\_source::IXFfile\_read, 454
- IXFfile\_read\_fileio
  - IXMfileio, 120
  - IXMfileio::IXFfile\_read, 453
- IXFfile\_read\_history
  - IXMhistory, 137
  - IXMhistory::IXFfile\_read, 455
- IXFfile\_write\_data\_source
  - IXMdata\_source, 46
  - IXMdata\_source::IXFfile\_write, 458
- IXFfile\_write\_fileio
  - IXMfileio, 120
  - IXMfileio::IXFfile\_write, 457
- IXFfile\_write\_history
  - IXMhistory, 137
  - IXMhistory::IXFfile\_write, 459
- IXFfileread\_map
  - IXMmap, 165
- IXFfileread\_mask
  - IXMmask, 169
- IXFfindpath\_data\_source
  - IXMdata\_source, 46

- IXFget\_alloc\_data
  - IXMdata, 38
- IXFget\_alloc\_dataset\_1d
  - IXMdataset\_1d, 52
- IXFget\_alloc\_dataset\_2d
  - IXMdataset\_2d, 66
- IXFget\_alloc\_datum\_array
  - IXMdatum\_array, 87
- IXFget\_alloc\_detector
  - IXMdetector, 97
- IXFget\_alloc\_effdet\_index
  - IXMeffdet\_index, 104
- IXFget\_alloc\_map
  - IXMmap, 165
- IXFget\_alloc\_mask
  - IXMmask, 170
- IXFget\_alloc\_moderator
  - IXMmoderator, 182
- IXFget\_alloc\_peaks
  - IXMpeaks, 219
- IXFget\_alloc\_shape
  - IXMshape, 254
- IXFget\_alloc\_spectra
  - IXMspectra, 266
- IXFget\_alloc\_sw\_bridge
  - IXMsw\_bridge, 275
- IXFget\_alloc\_testclass
  - IXMtestclass, 278
- IXFget\_alloc\_workspace
  - IXMworkspace, 312
- IXFget\_alloc\_ws\_bridge
  - IXMws\_bridge, 320
- IXFget\_aperture
  - IXMaperture, 18
- IXFget\_attenuator
  - IXMattenuator, 23
- IXFget\_attributes\_orientation
  - IXMorientation, 214
- IXFget\_base
  - IXMbase, 26
- IXFget\_bridge
  - IXMbridge, 31
- IXFget\_char
  - IXMisis\_raw\_file, 152
  - IXMisis\_raw\_file::IXFget\_raw, 466
- IXFget\_chopper\_instrument
  - IXMchopper\_instrument, 34
- IXFget\_class\_orientation
  - IXMorientation, 214
- IXFget\_data
  - IXMdata, 39
- IXFget\_data\_i1
  - IXMisis\_raw\_file, 152
  - IXMisis\_raw\_file::IXFget\_raw, 467
- IXFget\_data\_i2
  - IXMisis\_raw\_file, 152
  - IXMisis\_raw\_file::IXFget\_raw, 467
- IXFget\_data\_source
  - IXMdata\_source, 47
- IXFget\_dataset\_1d
  - IXMdataset\_1d, 53
- IXFget\_dataset\_2d
  - IXMdataset\_2d, 66
- IXFget\_dataset\_3d
  - IXMdataset\_3d, 77
- IXFget\_dataset\_4d
  - IXMdataset\_4d, 80
- IXFget\_datum
  - IXMdatum, 84
- IXFget\_datum\_array
  - IXMdatum\_array, 87
- IXFget\_det\_he3
  - IXMdet\_he3, 90
- IXFget\_det\_solid
  - IXMdet\_solid, 92
- IXFget\_detector
  - IXMdetector, 98
- IXFget\_diffraction\_instrument
  - IXMdiffracton\_instrument, 102
- IXFget\_dp
  - IXMisis\_raw\_file, 153
  - IXMisis\_raw\_file::IXFget\_raw, 466
- IXFget\_dp1
  - IXMisis\_raw\_file, 153
  - IXMisis\_raw\_file::IXFget\_raw, 466
- IXFget\_dp2
  - IXMisis\_raw\_file, 153
  - IXMisis\_raw\_file::IXFget\_raw, 466
- IXFget\_effdet\_index
  - IXMeffdet\_index, 105
- IXFget\_Fermi\_chopper
  - IXMfermi\_chopper, 111
- IXFget\_geometry
  - IXMgeometry, 125
- IXFget\_group
  - IXMgroup, 128
- IXFget\_groups
  - IXMgroups, 131
- IXFget\_history
  - IXMhistory, 137
- IXFget\_input\_source
  - IXMinput\_source, 140
- IXFget\_instrument
  - IXMinstrument, 145
- IXFget\_int
  - IXMisis\_raw\_file, 153
  - IXMisis\_raw\_file::IXFget\_raw, 465
- IXFget\_int1

- IXMisis\_raw\_file, 154
- IXMisis\_raw\_file::IXFget\_raw, 465
- IXFget\_int2
  - IXMisis\_raw\_file, 154
  - IXMisis\_raw\_file::IXFget\_raw, 466
- IXFget\_ISIS\_Raw\_File
  - IXMisis\_raw\_file, 154
- IXFget\_lattice
  - IXMlattice, 161
- IXFget\_map
  - IXMmap, 165
- IXFget\_mask
  - IXMmask, 170
- IXFget\_moderator
  - IXMmoderator, 182
- IXFget\_moments
  - IXMmoments, 184
- IXFget\_options
  - IXMoptions, 210
- IXFget\_orientation
  - IXMorientation, 214
- IXFget\_peaks
  - IXMpeaks, 219
- IXFget\_ptr\_bridge
  - IXMbridge, 31
- IXFget\_ptr\_chopper\_instrument
  - IXMchopper\_instrument, 34
- IXFget\_ptr\_data
  - IXMdata, 39
- IXFget\_ptr\_data\_source
  - IXMdata\_source, 47
- IXFget\_ptr\_dataset\_1d
  - IXMdataset\_1d, 53
- IXFget\_ptr\_dataset\_2d
  - IXMdataset\_2d, 66
- IXFget\_ptr\_datum\_array
  - IXMdatum\_array, 87
- IXFget\_ptr\_detector
  - IXMdetector, 98
- IXFget\_ptr\_diffraction\_instrument
  - IXMdiffraction\_instrument, 102
- IXFget\_ptr\_effdet\_index
  - IXMeffdet\_index, 105
- IXFget\_ptr\_history
  - IXMhistory, 138
- IXFget\_ptr\_instrument
  - IXMinstrument, 145
- IXFget\_ptr\_map
  - IXMmap, 166
- IXFget\_ptr\_mask
  - IXMmask, 170
- IXFget\_ptr\_moderator
  - IXMmoderator, 182
- IXFget\_ptr\_peaks
  - IXMpeaks, 219
- IXFget\_ptr\_shape
  - IXMshape, 254
- IXFget\_ptr\_spectra
  - IXMspectra, 266
- IXFget\_ptr\_sw\_bridge
  - IXMsw\_bridge, 275
- IXFget\_ptr\_testclass
  - IXMtestclass, 278
- IXFget\_ptr\_workspace
  - IXMworkspace, 312
- IXFget\_ptr\_ws\_bridge
  - IXMws\_bridge, 320
- IXFget\_real
  - IXMisis\_raw\_file, 154
  - IXMisis\_raw\_file::IXFget\_raw, 465
- IXFget\_real1
  - IXMisis\_raw\_file, 155
  - IXMisis\_raw\_file::IXFget\_raw, 465
- IXFget\_real2
  - IXMisis\_raw\_file, 155
  - IXMisis\_raw\_file::IXFget\_raw, 465
- IXFget\_rotvec\_orientation
  - IXMorientation, 214
- IXFget\_runfile
  - IXMrunfile, 235
- IXFget\_sample
  - IXMsample, 247
- IXFget\_shape
  - IXMshape, 255
- IXFget\_source
  - IXMsource, 263
- IXFget\_spectra
  - IXMspectra, 266
- IXFget\_spectrum\_array\_d1
  - IXMisis\_raw\_file, 155
  - IXMisis\_raw\_file::IXFget\_raw, 466
- IXFget\_spectrum\_array\_d2
  - IXMisis\_raw\_file, 156
  - IXMisis\_raw\_file::IXFget\_raw, 467
- IXFget\_spectrum\_d1
  - IXMisis\_raw\_file, 156
  - IXMisis\_raw\_file::IXFget\_raw, 466
- IXFget\_spectrum\_d2
  - IXMisis\_raw\_file, 157
  - IXMisis\_raw\_file::IXFget\_raw, 467
- IXFget\_sw\_bridge
  - IXMsw\_bridge, 275
- IXFget\_testclass
  - IXMtestclass, 278
- IXFget\_translation
  - IXMtranslation, 292
- IXFget\_units
  - IXMunits, 302



- IXFget\_user
  - IXMuser, 310
- IXFget\_workspace
  - IXMworkspace, 312
- IXFget\_ws\_bridge
  - IXMws\_bridge, 321
- IXFgetdetdata\_runfile
  - IXMrunfile, 236
- IXFgetdets\_spectra
  - IXMspectra, 267
- IXFgetei\_data
  - IXMdata, 39
- IXFgetei\_dataset\_2d
  - IXMdataset\_2d, 67
- IXFgetei\_runfile
  - IXMrunfile, 236
- IXFgeteival\_runfile
  - IXMrunfile, 236
- IXFgetmondadata\_runfile
  - IXMrunfile, 236
- IXFgetspecsgood\_ws\_bridge
  - IXMws\_bridge, 321
- IXFgetspecstotal\_ws\_bridge
  - IXMws\_bridge, 321
- IXFid\_groups
  - IXMgroups, 131
- IXFincref\_detector
  - IXMdetector, 99
- IXFinit\_status
  - IXMstatus, 271
- IXFinitialised\_base
  - IXMbase, 26
- IXFintegrate\_1d\_hist
  - IXMintegrate, 148
- IXFintegrate\_1d\_points
  - IXMintegrate, 148
- IXFintegrate\_2d\_hist
  - IXMintegrate, 148
- IXFintegrate\_dataset\_1d
  - IXMdataset\_1d, 53
- IXFintegrate\_xy\_dataset\_2d
  - IXMdataset\_2d, 67
- IXFintegrate\_y\_dataset\_2d
  - IXMdataset\_2d, 67
- IXFintXsumY\_dataset\_2d
  - IXMdataset\_2d, 68
- IXFlibrary\_finish
  - IXMlibcore, 162
- IXFlibrary\_init
  - IXMlibcore, 162
- IXFlog\_dataset\_1d
  - IXMdataset\_1d::IXFlog, 472
- IXFlog\_dataset\_2d
  - IXMdataset\_2d::IXFlog, 473
- IXFlog\_Datum
  - IXMdatum, 84
- IXFlog\_datum
  - IXMdatum::IXFlog, 474
- IXFlog\_datum\_array
  - IXMdatum\_array::IXFlog, 471
- IXFmake\_dataset\_1d
  - IXMdataset\_1d, 53
- IXFmake\_dataset\_2d
  - IXMdataset\_2d, 68
- IXFmake\_label\_dataset\_1d
  - IXMdataset\_1d, 54
- IXFmake\_label\_dataset\_2d
  - IXMdataset\_2d, 69
- IXFmake\_label\_units
  - IXMunits, 302
- IXFmark\_valid\_base
  - IXMbase, 26
- IXFmatmul\_translation
  - IXMtranslation, 292
- IXFmemory\_cleanup
  - IXMmemory, 179
- IXFmemory\_init
  - IXMmemory, 179
- IXFmoments\_dataset\_2d
  - IXMdataset\_2d, 69
- IXFmon\_norm\_runfile
  - IXMrunfile, 237
- IXFname\_groups
  - IXMgroups, 132
- IXFnorm
  - IXMmaths\_basis, 173
- IXFnorm\_translation
  - IXMtranslation, 292
- IXFop\_filereadMake
  - IXMoperation, 200
- IXFop\_filewriteMake
  - IXMoperation, 200
- IXFop\_getMake
  - IXMoperation, 200
- IXFop\_initMake
  - IXMoperation, 200
- IXFop\_matlabreadMake
  - IXMoperation, 200
- IXFop\_matlabwriteMake
  - IXMoperation, 200
- IXFop\_setMake
  - IXMoperation, 200
- IXFopen\_raw
  - IXMmisis\_raw\_file, 157
- IXFopen\_raw\_handle
  - IXMmisis\_raw\_file, 158
- IXFoperation\_run\_aperture
  - IXMaperture, 18

- IXFoperation\_run\_array\_data\_source
  - IXMoperation, 200
- IXFoperation\_run\_array\_fileio
  - IXMoperation, 201
- IXFoperation\_run\_array\_history
  - IXMoperation, 201
- IXFoperation\_run\_attenuator
  - IXMattenuator, 23
- IXFoperation\_run\_base
  - IXMbase, 26
- IXFoperation\_run\_bridge
  - IXMbridge, 31
- IXFoperation\_run\_chopper\_instrument
  - IXMchopper\_instrument, 34
- IXFoperation\_run\_data
  - IXMdata, 39
- IXFoperation\_run\_data\_source
  - IXMoperation, 201
- IXFoperation\_run\_dataset\_1d
  - IXMdataset\_1d, 54
- IXFoperation\_run\_dataset\_2d
  - IXMdataset\_2d, 69
- IXFoperation\_run\_dataset\_3d
  - IXMdataset\_3d, 78
- IXFoperation\_run\_dataset\_4d
  - IXMdataset\_4d, 80
- IXFoperation\_run\_datum
  - IXMdatum, 85
- IXFoperation\_run\_datum\_array
  - IXMdatum\_array, 87
- IXFoperation\_run\_det\_he3
  - IXMdet\_he3, 91
- IXFoperation\_run\_det\_solid
  - IXMdet\_solid, 93
- IXFoperation\_run\_detector
  - IXMdetector, 99
- IXFoperation\_run\_diffraction\_instrument
  - IXMdiffraction\_instrument, 102
- IXFoperation\_run\_effdet\_index
  - IXMeffdet\_index, 105
- IXFoperation\_run\_fermi\_chopper
  - IXMfermi\_chopper, 111
- IXFoperation\_run\_fileio
  - IXMoperation, 201
- IXFoperation\_run\_geometry
  - IXMgeometry, 125
- IXFoperation\_run\_group
  - IXMgroup, 129
- IXFoperation\_run\_groups
  - IXMgroups, 132
- IXFoperation\_run\_history
  - IXMoperation, 202
- IXFoperation\_run\_input\_source
  - IXMinput\_source, 141
- IXFoperation\_run\_instrument
  - IXMinstrument, 145
- IXFoperation\_run\_ISIS\_Raw\_File
  - IXMisis\_raw\_file, 158
- IXFoperation\_run\_lattice
  - IXMlattice, 161
- IXFoperation\_run\_map
  - IXMmap, 166
- IXFoperation\_run\_mask
  - IXMmask, 171
- IXFoperation\_run\_moderator
  - IXMmoderator, 182
- IXFoperation\_run\_moments
  - IXMmoments, 185
- IXFoperation\_run\_options
  - IXMoptions, 211
- IXFoperation\_run\_orientation
  - IXMorientation, 215
- IXFoperation\_run\_peaks
  - IXMpeaks, 219
- IXFoperation\_run\_runfile
  - IXMrunfile, 237
- IXFoperation\_run\_sample
  - IXMsample, 248
- IXFoperation\_run\_shape
  - IXMshape, 255
- IXFoperation\_run\_run\_source
  - IXMsource, 264
- IXFoperation\_run\_spectra
  - IXMspectra, 267
- IXFoperation\_run\_sw\_bridge
  - IXMsw\_bridge, 275
- IXFoperation\_run\_testclass
  - IXMtestclass, 279
- IXFoperation\_run\_translation
  - IXMtranslation, 293
- IXFoperation\_run\_units
  - IXMunits, 303
- IXFoperation\_run\_user
  - IXMuser, 310
- IXFoperation\_run\_workspace
  - IXMworkspace, 312
- IXFoperation\_run\_ws\_bridge
  - IXMws\_bridge, 321
- IXFoperationArrayInit
  - IXMoperation, 202
- IXFoperationCleanup
  - IXMoperation, 202
- IXFoperationFinish
  - IXMoperation, 203
- IXFoperationStart
  - IXMoperation, 203
- IXFpeak\_norm\_runfile
  - IXMrunfile, 237

IXFpeakarea\_data  
  IXMdata, 39  
IXFPlus\_testclass  
  IXMtestclass, 279  
IXFpolygon\_moments  
  IXMmaths\_geometry, 175  
IXFpopulate\_bridge  
  IXMbridge, 31  
IXFpopulate\_chopper\_instrument  
  IXMchopper\_instrument, 34  
IXFpopulate\_data\_dso  
  IXMdata, 40  
  IXMdata::IXFpopulate\_data, 514  
IXFpopulate\_det\_runfile  
  IXMrunfile, 237  
IXFpopulate\_detector  
  IXMdetector, 99  
IXFpopulate\_diffraction\_instrument  
  IXMdiffraction\_instrument, 102  
IXFpopulate\_effdet\_index  
  IXMeffdet\_index, 105  
IXFpopulate\_instrument  
  IXMinstrument, 145  
IXFpopulate\_map\_dso  
  IXMmap, 166  
IXFpopulate\_mask\_dso  
  IXMmask, 171  
IXFpopulate\_mon\_runfile  
  IXMrunfile, 238  
IXFpopulate\_runfile  
  IXMrunfile, 239  
IXFpopulate\_sw\_bridge  
  IXMsw\_bridge, 276  
IXFpopulate\_workspace  
  IXMworkspace, 313  
IXFpresent  
  IXMoptions, 211  
IXFprint\_groups  
  IXMgroups, 132  
IXFproj\_projection  
  IXMmaths\_projection, 176  
IXFprojarea\_vertices\_geometry  
  IXMgeometry, 125  
IXFprojarea\_vertices\_shape  
  IXMshape, 255  
IXFrawfile\_popdet\_map  
  IXMmap, 166  
IXFrawfile\_popmon\_map  
  IXMmap, 167  
IXFread\_dso\_map  
  IXMmap, 167  
IXFread\_dso\_mask  
  IXMmask, 171  
IXFread\_map  
  IXMmap, 167  
IXFread\_mask  
  IXMmask, 171  
IXFreadgen\_dso\_mask  
  IXMmask, 172  
IXFrebin\_1d\_hist  
  IXMrebin, 224  
IXFrebin\_1d\_hist\_get\_arr  
  IXMrebin, 224  
IXFrebin\_data  
  IXMdata, 40  
IXFrebin\_dataset\_1d  
  IXMdataset\_1d, 54  
IXFrebin\_points  
  IXMrebin, 224  
IXFrebin\_runfile  
  IXMrunfile, 240  
IXFrebin\_x\_dataset\_2d  
  IXMdataset\_2d, 69  
IXFrebin\_xy\_dataset\_2d  
  IXMdataset\_2d, 70  
IXFrebin\_y\_dataset\_2d  
  IXMdataset\_2d, 70  
IXFrebinX\_2d\_hist  
  IXMrebin, 225  
IXFrebinY\_2d\_hist  
  IXMrebin, 225  
IXFrebunch\_dataset\_1d  
  IXMdataset\_1d, 54  
IXFrebunch\_hist  
  IXMrebunch, 226  
IXFrebunch\_histX\_2d  
  IXMrebunch, 226  
IXFrebunch\_histY\_2d  
  IXMrebunch, 227  
IXFrebunch\_points  
  IXMrebunch, 227  
IXFrebunch\_pointsX  
  IXMrebunch, 227  
IXFrebunch\_pointsY  
  IXMrebunch, 227  
IXFrebunch\_x\_dataset\_2d  
  IXMdataset\_2d, 71  
IXFrebunch\_xy\_dataset\_2d  
  IXMdataset\_2d, 71  
IXFrebunch\_y\_dataset\_2d  
  IXMdataset\_2d, 71  
IXFrebunchHist  
  IXMrebunch, 227  
IXFrebunchHistX  
  IXMrebunch, 228  
IXFrebunchHistY  
  IXMrebunch, 228  
IXFrebunchPoints

- IXMrebunch, 228
- IXFrebunchPointsX
  - IXMrebunch, 229
- IXFrebunchPointsY
  - IXMrebunch, 229
- IXFrebunchXY
  - IXMrebunch, 229
- IXFregroup\_1d\_hist
  - IXMregroup, 231
- IXFregroup\_dataset\_1d
  - IXMdataset\_1d, 55
- IXFregroup\_x\_dataset\_2d
  - IXMdataset\_2d, 72
- IXFregroup\_xy\_dataset\_2d
  - IXMdataset\_2d, 72
- IXFregroup\_y\_dataset\_2d
  - IXMdataset\_2d, 73
- IXFregroupX\_2d\_hist
  - IXMregroup, 231
- IXFregroupY\_2d\_hist
  - IXMregroup, 231
- IXFremap\_data
  - IXMdata, 41
- IXFremap\_runfile
  - IXMrunfile, 240
- IXFreplaceitem\_data\_source
  - IXMdata\_source, 47
- IXFrotmat\_orthogonal
  - IXMmaths\_basis, 173
- IXFrotmat\_to\_rotvec
  - IXMmaths\_basis, 174
- IXFrotvec\_to\_rotmat
  - IXMmaths\_basis, 174
- IXFs2sprime\_orientation
  - IXMorientation, 215
- IXFs2sprime\_translation
  - IXMtranslation, 293
- IXFset\_aperture
  - IXMaperture, 18
- IXFset\_attenuator
  - IXMattenuator, 23
- IXFset\_attributes\_orientation
  - IXMorientation, 215
- IXFset\_base
  - IXMbase, 26
- IXFset\_bridge
  - IXMbridge, 32
- IXFset\_chopper\_instrument
  - IXMchopper\_instrument, 35
- IXFset\_class\_orientation
  - IXMorientation, 215
- IXFset\_data
  - IXMdata, 41
- IXFset\_data\_source
  - IXMdata\_source, 48
- IXFset\_dataset\_1d
  - IXMdataset\_1d, 55
- IXFset\_dataset\_2d
  - IXMdataset\_2d, 73
- IXFset\_dataset\_3d
  - IXMdataset\_3d, 78
- IXFset\_dataset\_4d
  - IXMdataset\_4d, 80
- IXFset\_datum
  - IXMdatum, 85
- IXFset\_datum\_array
  - IXMdatum\_array, 88
- IXFset\_det\_he3
  - IXMdet\_he3, 91
- IXFset\_det\_solid
  - IXMdet\_solid, 93
- IXFset\_detector
  - IXMdetector, 99
- IXFset\_diffraction\_instrument
  - IXMdiffraction\_instrument, 102
- IXFset\_effdet\_index
  - IXMeffdet\_index, 106
- IXFset\_Fermi\_chopper
  - IXMfermi\_chopper, 111
- IXFset\_geometry
  - IXMgeometry, 126
- IXFset\_group
  - IXMgroup, 129
- IXFset\_groups
  - IXMgroups, 132
- IXFset\_history
  - IXMhistory, 138
- IXFset\_input\_source
  - IXMinput\_source, 141
- IXFset\_instrument
  - IXMinstrument, 146
- IXFset\_ISIS\_Raw\_File
  - IXMisis\_raw\_file, 158
- IXFset\_lattice
  - IXMlattice, 161
- IXFset\_map
  - IXMmap, 167
- IXFset\_mask
  - IXMmask, 172
- IXFset\_moderator
  - IXMmoderator, 183
- IXFset\_moments
  - IXMmoments, 185
- IXFset\_options
  - IXMoptions, 211
- IXFset\_orientation
  - IXMorientation, 215
- IXFset\_peaks

- IXMpeaks, 220
- IXFset\_rotvec\_orientation
  - IXMorientation, 216
  - IXMorientation::IXFsetgen\_orientation, 529
- IXFset\_runfile
  - IXMrunfile, 241
- IXFset\_sample
  - IXMsample, 248
- IXFset\_shape
  - IXMshape, 256
- IXFset\_source
  - IXMsource, 264
- IXFset\_spectra
  - IXMspectra, 267
- IXFset\_sw\_bridge
  - IXMsw\_bridge, 276
- IXFset\_testclass
  - IXMtestclass, 279
- IXFset\_translation
  - IXMtranslation, 293
- IXFset\_units
  - IXMunits, 303
- IXFset\_user
  - IXMuser, 310
- IXFset\_workspace
  - IXMworkspace, 313
- IXFset\_ws\_bridge
  - IXMws\_bridge, 321
- IXFshift
  - IXMshift, 261
- IXFshift\_dataset\_1d
  - IXMdataset\_1d, 55
- IXFshift\_dataset\_2d
  - IXMdataset\_2d, 74
- IXFsin\_dataset\_1d
  - IXMdataset\_1d::IXFsin, 531
- IXFsin\_dataset\_2d
  - IXMdataset\_2d::IXFsin, 532
- IXFsin\_Datum
  - IXMdatum, 85
- IXFsin\_datum
  - IXMdatum::IXFsin, 533
- IXFsin\_datum\_array
  - IXMdatum\_array::IXFsin, 530
- IXFsinh\_dataset\_1d
  - IXMdataset\_1d::IXFsinh, 535
- IXFsinh\_dataset\_2d
  - IXMdataset\_2d::IXFsinh, 536
- IXFsinh\_Datum
  - IXMdatum, 85
- IXFsinh\_datum
  - IXMdatum::IXFsinh, 537
- IXFsinh\_datum\_array
  - IXMdatum\_array::IXFsinh, 534
- IXFSize\_Datum\_array
  - IXMdatum\_array, 88
- IXFsize\_raw\_i
  - IXMisis\_raw\_file, 158
  - IXMisis\_raw\_file::IXFsize\_raw, 539
- IXFsize\_raw\_i\_array
  - IXMisis\_raw\_file, 158
  - IXMisis\_raw\_file::IXFsize\_raw, 539
- IXFsolid\_angle\_box
  - IXMshape, 256
- IXFsolid\_angle\_cylinder
  - IXMshape, 256
- IXFsolid\_angle\_geometry
  - IXMgeometry, 126
- IXFsolid\_angle\_holcyl
  - IXMshape, 256
- IXFsolid\_angle\_point
  - IXMshape, 257
- IXFsolid\_angle\_polygon
  - IXMshape, 257
- IXFsolid\_angle\_shape
  - IXMshape, 257
- IXFsolid\_angle\_sphere
  - IXMshape, 257
- IXFsolid\_runfile
  - IXMrunfile, 241
- IXFprime2s\_orientation
  - IXMorientation, 216
- IXFprime2s\_translation
  - IXMtranslation, 293
- IXFtan\_dataset\_1d
  - IXMdataset\_1d::IXFtan, 543
- IXFtan\_dataset\_2d
  - IXMdataset\_2d::IXFtan, 544
- IXFtan\_Datum
  - IXMdatum, 85
- IXFtan\_datum
  - IXMdatum::IXFtan, 546
- IXFtan\_datum\_array
  - IXMdatum\_array::IXFtan, 545
- IXFtanh\_dataset\_1d
  - IXMdataset\_1d::IXFtanh, 548
- IXFtanh\_dataset\_2d
  - IXMdataset\_2d::IXFtanh, 549
- IXFtanh\_Datum
  - IXMdatum, 85
- IXFtanh\_datum
  - IXMdatum::IXFtanh, 550
- IXFtanh\_datum\_array
  - IXMdatum\_array::IXFtanh, 547
- IXFtestfunc\_testclass
  - IXMtestclass, 280
- IXFtimes\_op\_orientation

- IXMorientation, 216
- IXFtransmission\_gen\_fermi\_chopper
  - IXMfermi\_chopper, 112
- IXFtransmission\_internal\_ei\_fermi\_chopper
  - IXMfermi\_chopper, 112
- IXFtransmission\_internal\_ei\_odd\_fermi\_chopper
  - IXMfermi\_chopper, 112
- IXFtransmission\_scalar\_ei\_fermi\_chopper
  - IXMfermi\_chopper, 112
- IXFtransmission\_scalar\_ei\_odd\_fermi\_chopper
  - IXMfermi\_chopper, 113
- IXFtransmission\_vector\_ei\_fermi\_chopper
  - IXMfermi\_chopper, 113
- IXFtransmission\_vector\_ei\_odd\_fermi\_chopper
  - IXMfermi\_chopper, 113
- IXFtt\_minus\_op\_translation
  - IXMtranslation, 293
- IXFtt\_plus\_op\_translation
  - IXMtranslation, 293
- IXFtv\_minus\_op\_translation
  - IXMtranslation, 294
- IXFtv\_plus\_op\_translation
  - IXMtranslation, 294
- IXFunit\_matrix
  - IXMmaths\_utils, 178
- IXFunits\_convert
  - IXMunits\_utils, 304
- IXFunits\_data
  - IXMdata, 42
- IXFunits\_dataset\_1d
  - IXMdataset\_1d, 56
- IXFunits\_get\_len\_arr
  - IXMunits\_utils, 304
- IXFunits\_rebin\_data
  - IXMdata, 42
- IXFunitsinfo\_instrument
  - IXMinstrument, 146
- IXFunspike\_1d
  - IXMunspike, 308
- IXFunspike\_dataset\_1d
  - IXMdataset\_1d, 56
  - IXMdataset\_1d::IXFunspike, 570
- IXFunspike\_dataset\_2d
  - IXMdataset\_2d, 74
  - IXMdataset\_2d::IXFunspike, 571
- IXFupdate\_detector
  - IXMdetector, 100
- IXFvalid\_base
  - IXMbase, 27
- IXFvariance\_gen\_fermi\_chopper
  - IXMfermi\_chopper, 113
- IXFvariance\_internal\_ei\_fermi\_chopper
  - IXMfermi\_chopper, 114
- IXFvariance\_internal\_ei\_odd\_fermi\_chopper
  - IXMfermi\_chopper, 114
- IXFvariance\_scalar\_ei\_fermi\_chopper
  - IXMfermi\_chopper, 114
- IXFvariance\_scalar\_ei\_odd\_fermi\_chopper
  - IXMfermi\_chopper, 114
- IXFvariance\_vector\_ei\_fermi\_chopper
  - IXMfermi\_chopper, 115
- IXFvariance\_vector\_ei\_odd\_fermi\_chopper
  - IXMfermi\_chopper, 115
- IXFverify\_period\_map
  - IXMmap, 168
- IXFvolume\_box
  - IXMshape, 258
- IXFvolume\_cylinder
  - IXMshape, 258
- IXFvolume\_geometry
  - IXMgeometry, 127
- IXFvolume\_holcyl
  - IXMshape, 258
- IXFvolume\_point
  - IXMshape, 258
- IXFvolume\_polygon
  - IXMshape, 258
- IXFvolume\_shape
  - IXMshape, 259
- IXFvolume\_sphere
  - IXMshape, 259
- IXFvt\_minus\_op\_translation
  - IXMtranslation, 294
- IXFvt\_plus\_op\_translation
  - IXMtranslation, 294
- IXFwhitecompare\_instrument
  - IXMinstrument, 147
- IXFwhitecompare\_runfile
  - IXMrunfile, 242
- IXFwhitecompare\_spectra
  - IXMspectra, 267
- IXFwkspec\_map
  - IXMmap, 168
- IXFwrap\_type
  - IXMwrapped\_var, 315
- IXFwrite\_line
  - IXMio, 150
- IXFwrite\_line\_indent
  - IXMio, 150
- IXGstatus
  - IXMstatus, 273
- ixicalloc\_
  - bindings\_utils.c, 722
- ixidealloc\_
  - bindings\_utils.c, 722

- IXIwrite\_line
  - IXMio.f90, 858
- IXMaperture, 17
  - IXFcheck\_aperture, 17
  - IXFcreate\_aperture, 17
  - IXFdestroy\_aperture, 18
  - IXFget\_aperture, 18
  - IXFoperation\_run\_aperture, 18
  - IXFset\_aperture, 18
- IXMaperture.f90
  - IXD\_DESCRIPTION, 730
  - IXD\_SQTYPE, 730
  - IXD\_TYPE, 730
- IXMaperture::IXTaperture, 584
  - base, 584
  - distance, 584
  - height, 585
  - horiz\_posn, 585
  - name, 584
  - radius, 585
  - shape, 584
  - vert\_posn, 585
  - width, 585
- IXMarraymanips, 20
  - IXFcreatebinfac\_D1, 20
  - IXFcreatebinfac\_D2, 20
  - IXFcreatePfac\_D1, 21
  - IXFcreatePfac\_D2, 21
- IXMarraymanips.f90
  - IXD\_DIMS, 852
  - IXD\_NAME, 852
  - IXD\_PM, 852
  - IXD\_TD, 852
- IXMarraymanips::IXFarrayCheck, 393
- IXMarraymanips::IXFarrayCheck
  - arrayCheck\_1D, 393
  - arrayCheck\_2D, 393
  - arrayCheck\_3D, 393
- IXMarraymanips::IXFarrayCos, 394
- IXMarraymanips::IXFarrayCos
  - arrayCos\_1D, 394
  - arrayCos\_2D, 394
  - arrayCos\_3D, 394
- IXMarraymanips::IXFarrayCosh, 395
- IXMarraymanips::IXFarrayCosh
  - arrayCosh\_1D, 395
  - arrayCosh\_2D, 395
  - arrayCosh\_3D, 395
- IXMarraymanips::IXFarrayDivide, 396
- IXMarraymanips::IXFarrayDivide
  - arrayDivideDD\_1D, 396
  - arrayDivideDD\_2D, 396
  - arrayDivideDD\_3D, 396
  - arrayDivideDS\_1D, 396
  - arrayDivideDS\_2D, 396
  - arrayDivideDS\_3D, 396
- IXMarraymanips::IXFarrayDivideAD, 397
- IXMarraymanips::IXFarrayDivideAD
  - arrayDivideAD\_1D, 397
  - arrayDivideAD\_2D, 397
  - arrayDivideAD\_3D, 397
- IXMarraymanips::IXFarrayDivideDA, 398
- IXMarraymanips::IXFarrayDivideDA
  - arrayDivideDA\_1D, 398
  - arrayDivideDA\_2D, 398
  - arrayDivideDA\_3D, 398
- IXMarraymanips::IXFarrayExp, 399
- IXMarraymanips::IXFarrayExp
  - arrayExp\_1D, 399
  - arrayExp\_2D, 399
  - arrayExp\_3D, 399
- IXMarraymanips::IXFarrayLog, 400
- IXMarraymanips::IXFarrayLog
  - arrayLog\_1D, 400
  - arrayLog\_2D, 400
  - arrayLog\_3D, 400
- IXMarraymanips::IXFarrayMinus, 401
- IXMarraymanips::IXFarrayMinus
  - arrayMinusDD\_1D, 401
  - arrayMinusDD\_2D, 401
  - arrayMinusDD\_3D, 401
  - arrayMinusDS\_1D, 401
  - arrayMinusDS\_2D, 401
  - arrayMinusDS\_3D, 401
  - arrayMinusSD\_1D, 401
  - arrayMinusSD\_2D, 401
  - arrayMinusSD\_3D, 401
- IXMarraymanips::IXFarrayMinusAD, 402
- IXMarraymanips::IXFarrayMinusAD
  - arrayMinusAD\_1D, 402
  - arrayMinusAD\_2D, 402
  - arrayMinusAD\_3D, 402
- IXMarraymanips::IXFarrayMinusDA, 403
- IXMarraymanips::IXFarrayMinusDA
  - arrayMinusDA\_1D, 403
  - arrayMinusDA\_2D, 403
  - arrayMinusDA\_3D, 403
- IXMarraymanips::IXFarrayPlus, 404
- IXMarraymanips::IXFarrayPlus
  - arrayPlusDD\_1D, 404
  - arrayPlusDD\_2D, 404
  - arrayPlusDD\_3D, 404
  - arrayPlusDS\_1D, 404
  - arrayPlusDS\_2D, 404
  - arrayPlusDS\_3D, 404

- arrayPlusSD\_1D, 404
- arrayPlusSD\_2D, 404
- arrayPlusSD\_3D, 404
- IXMarraymanips::IXFarrayPlusAD, 405
- IXMarraymanips::IXFarrayPlusAD
  - arrayPlusAD\_1D, 405
  - arrayPlusAD\_2D, 405
  - arrayPlusAD\_3D, 405
- IXMarraymanips::IXFarrayPlusDA, 406
- IXMarraymanips::IXFarrayPlusDA
  - arrayPlusDA\_1D, 406
  - arrayPlusDA\_2D, 406
  - arrayPlusDA\_3D, 406
- IXMarraymanips::IXFarrayPower, 407
- IXMarraymanips::IXFarrayPower
  - arrayPowerDD\_1D, 407
  - arrayPowerDD\_2D, 407
  - arrayPowerDD\_3D, 407
  - arrayPowerDS\_1D, 407
  - arrayPowerDS\_2D, 407
  - arrayPowerDS\_3D, 407
  - arrayPowerSD\_1D, 407
  - arrayPowerSD\_2D, 407
  - arrayPowerSD\_3D, 407
- IXMarraymanips::IXFarraySin, 408
- IXMarraymanips::IXFarraySin
  - arraySin\_1D, 408
  - arraySin\_2D, 408
  - arraySin\_3D, 408
- IXMarraymanips::IXFarraySinh, 409
- IXMarraymanips::IXFarraySinh
  - arraySinh\_1D, 409
  - arraySinh\_2D, 409
  - arraySinh\_3D, 409
- IXMarraymanips::IXFarrayTan, 410
- IXMarraymanips::IXFarrayTan
  - arrayTan\_1D, 410
  - arrayTan\_2D, 410
  - arrayTan\_3D, 410
- IXMarraymanips::IXFarrayTanh, 411
- IXMarraymanips::IXFarrayTanh
  - arrayTanh\_1D, 411
  - arrayTanh\_2D, 411
  - arrayTanh\_3D, 411
- IXMarraymanips::IXFarrayTimes, 412
- IXMarraymanips::IXFarrayTimes
  - arrayTimesDD\_1D, 412
  - arrayTimesDD\_2D, 412
  - arrayTimesDD\_3D, 412
  - arrayTimesDS\_1D, 412
  - arrayTimesDS\_2D, 412
  - arrayTimesDS\_3D, 412
  - arrayTimesSD\_1D, 412
  - arrayTimesSD\_2D, 412
  - arrayTimesSD\_3D, 412
- IXMarraymanips::IXFarrayTimesAD, 413
- IXMarraymanips::IXFarrayTimesAD
  - arrayTimesAD\_1D, 413
  - arrayTimesAD\_2D, 413
  - arrayTimesAD\_3D, 413
- IXMarraymanips::IXFarrayTimesDA, 414
- IXMarraymanips::IXFarrayTimesDA
  - arrayTimesDA\_1D, 414
  - arrayTimesDA\_2D, 414
  - arrayTimesDA\_3D, 414
- IXMattenuator, 22
  - IXFcheck\_attenuator, 22
  - IXFcreate\_attenuator, 22
  - IXFdestroy\_attenuator, 22
  - IXFget\_attenuator, 23
  - IXFoperation\_run\_attenuator, 23
  - IXFset\_attenuator, 23
- IXMattenuator.f90
  - IXD\_DESCRIPTION, 731
  - IXD\_SQTYPE, 731
  - IXD\_TYPE, 731
- IXMattenuator::IXTattenuator, 586
  - attenuation, 587
  - base, 586
  - distance, 587
  - material, 587
  - name, 586
  - thickness, 587
- IXMbase, 24
  - geti\_1d, 25
  - geti\_2d, 25
  - getr\_1d, 25
  - getr\_2d, 25
  - IXCchop\_inst, 27
  - IXCcommand\_line, 27
  - IXCdetmap, 27
  - IXCdetmask, 27
  - IXCdiff\_inst, 28
  - IXCdiffraction, 28
  - IXCdirect, 28
  - IXCfermi\_chopper, 28
  - IXCindi\_inst, 28
  - IXCindirect, 28
  - IXCmapfile, 28
  - IXCmaskfile, 28
  - IXCmoderator, 28
  - IXCmonmap, 28
  - IXCmonmask, 29
  - IXCobject\_initialised, 29
  - IXCprogname, 29
  - IXCrawfile, 29
  - IXCsource, 29
  - IXFcheck\_base, 25



- IXFclear\_valid\_base, 25
- IXFcreate\_base, 25
- IXFdestroy\_base, 25
- IXFget\_base, 26
- IXFinitialised\_base, 26
- IXFmark\_valid\_base, 26
- IXFoperation\_run\_base, 26
- IXFset\_base, 26
- IXFvalid\_base, 27
- seti\_1d, 27
- seti\_2d, 27
- setr\_1d, 27
- setr\_2d, 27
- IXMbase.f90
  - IXD\_NO\_BASE, 733
  - IXD\_SQTYPE, 733
  - IXD\_TYPE, 733
- IXMbase::IXFget\_integer\_array, 462
  - geti\_1d, 462
  - geti\_2d, 462
- IXMbase::IXFget\_real\_array, 468
  - getr\_1d, 468
  - getr\_2d, 468
- IXMbase::IXFset\_integer\_array, 527
  - seti\_1d, 527
  - seti\_2d, 527
- IXMbase::IXFset\_real\_array, 528
  - setr\_1d, 528
  - setr\_2d, 528
- IXMbase::IXTbase, 588
  - entry\_name, 588
  - initialised, 588
  - valid, 588
- IXMbridge, 30
  - IXFcheck\_bridge, 30
  - IXFcompare\_bridge, 30
  - IXFcreate\_bridge, 30
  - IXFdestroy\_bridge, 31
  - IXFget\_bridge, 31
  - IXFget\_ptr\_bridge, 31
  - IXFoperation\_run\_bridge, 31
  - IXFpopulate\_bridge, 31
  - IXFset\_bridge, 32
- IXMbridge.f90
  - IXD\_DESCRIPTION, 735
  - IXD\_SQTYPE, 735
  - IXD\_TYPE, 735
- IXMbridge::IXTbridge, 589
  - base, 589
  - sw\_bridge, 589
  - ws\_bridge, 589
- IXMchopper\_instrument, 33
  - chop\_inst, 35
  - get\_emode, 33
  - get\_ptr, 33
  - IXFcheck\_chopper\_instrument, 33
  - IXFcreate\_chopper\_instrument, 34
  - IXFdestroy\_chopper\_instrument, 34
  - IXFget\_chopper\_instrument, 34
  - IXFget\_ptr\_chopper\_instrument, 34
  - IXFoperation\_run\_chopper\_instrument, 34
  - IXFpopulate\_chopper\_instrument, 34
  - IXFset\_chopper\_instrument, 35
- IXMchopper\_instrument.f90
  - IXD\_DESCRIPTION, 737
  - IXD\_SQTYPE, 737
  - IXD\_TYPE, 737
- IXMchopper\_instrument::IXFget\_emode, 461
  - get\_emode, 461
- IXMchopper\_instrument::IXFget\_ptr, 464
  - get\_ptr, 464
- IXMchopper\_instrument::IXTchopper\_instrument, 590
  - base, 590
  - monochromator, 590
- IXMcrystalanalyser, 36
  - IXMcrystalanalyser::IXTcrystalanalyser, 591
    - base, 591
    - distance, 591
    - dspace, 592
    - energy, 592
    - height, 592
    - name, 591
    - reflection, 592
    - rho\_h, 592
    - rho\_v, 592
    - width, 592
- IXMdata, 37
  - IXFbackground\_data, 37
  - IXFcheck\_data, 37
  - IXFcomparebridge\_data, 38
  - IXFcreate\_data, 38
  - IXFdestroy\_data, 38
  - IXFget\_alloc\_data, 38
  - IXFget\_data, 39
  - IXFget\_ptr\_data, 39
  - IXFgetei\_data, 39
  - IXFoperation\_run\_data, 39
  - IXFpeakarea\_data, 39
  - IXFpopulate\_data\_dso, 40
  - IXFrebin\_data, 40
  - IXFremap\_data, 41
  - IXFset\_data, 41
  - IXFunits\_data, 42
  - IXFunits\_rebin\_data, 42
  - populate\_common, 42
  - popunitsrebin\_datasets, 43

- remap\_data, 43
- sum\_data, 44
- IXMdata.f90
  - IXD\_DESCRIPTION, 740
  - IXD\_SQTYPE, 740
  - IXD\_TYPE, 740
- IXMdata::IXFpopulate\_data, 514
  - IXFpopulate\_data\_dso, 514
- IXMdata::IXTdata, 593
  - base, 593
  - bridge, 594
  - datasets, 593
  - workspace, 593
- IXMdata\_source, 45
  - IXCdso\_initlength, 48
  - IXFadditem\_data\_source, 45
  - IXFcheck\_array\_data\_source, 45
  - IXFcheck\_data\_source, 45
  - IXFcreate\_data\_source, 46
  - IXFdelitem\_data\_source, 46
  - IXFdestroy\_data\_source, 46
  - IXFfile\_read\_data\_source, 46
  - IXFfile\_write\_data\_source, 46
  - IXFfindpath\_data\_source, 46
  - IXFget\_data\_source, 47
  - IXFget\_ptr\_data\_source, 47
  - IXFreplaceitem\_data\_source, 47
  - IXFset\_data\_source, 48
- IXMdata\_source::IXFcheck, 415
  - IXFcheck\_array\_data\_source, 415
  - IXFcheck\_data\_source, 415
- IXMdata\_source::IXFfile\_read, 454
  - IXFfile\_read\_data\_source, 454
- IXMdata\_source::IXFfile\_write, 458
  - IXFfile\_write\_data\_source, 458
- IXMdata\_source::IXTdata\_source, 595
  - counter, 595
  - datatype, 595
  - path, 595
- IXMdataset\_1d, 49
  - finish\_op\_dataset\_1d, 50
  - IXFcatarray\_dataset\_1d, 50
  - IXFcheck\_dataset\_1d, 50
  - IXFcreate\_dataset\_1d, 51
  - IXFcreatexye\_dataset\_1d, 51
  - IXFdaset\_1dPlusAAop, 51
  - IXFderiv1\_dataset\_1d, 51
  - IXFderiv2\_dataset\_1d, 52
  - IXFdestroy\_dataset\_1d, 52
  - IXFget\_alloc\_dataset\_1d, 52
  - IXFget\_dataset\_1d, 53
  - IXFget\_ptr\_dataset\_1d, 53
  - IXFintegrate\_dataset\_1d, 53
  - IXFmake\_dataset\_1d, 53
  - IXFmake\_label\_dataset\_1d, 54
  - IXFoperation\_run\_dataset\_1d, 54
  - IXFrebin\_dataset\_1d, 54
  - IXFrebunch\_dataset\_1d, 54
  - IXFregroup\_dataset\_1d, 55
  - IXFset\_dataset\_1d, 55
  - IXFshift\_dataset\_1d, 55
  - IXFunits\_dataset\_1d, 56
  - IXFunspike\_dataset\_1d, 56
  - setbase, 57
  - setup\_binary\_op\_dataset\_1d, 57
  - setup\_unary\_op\_dataset\_1d, 57
  - x\_hist, 57
- IXMdataset\_1d.f90
  - IXD\_DESCRIPTION, 745
  - IXD\_DIMS, 745
  - IXD\_NAME, 745
  - IXD\_OPERATION, 745
  - IXD\_SQTYPE, 745
  - IXD\_TYPE, 745
- IXMdataset\_1d::interface, 383
- IXMdataset\_1d::IXFcos, 421
  - IXFcos\_dataset\_1d, 421
- IXMdataset\_1d::IXFcosh, 426
  - IXFcosh\_dataset\_1d, 426
- IXMdataset\_1d::IXFdivide, 436
  - at\_divide\_dataset\_1d, 436
  - st\_divide\_dataset\_1d, 436
  - ta\_divide\_dataset\_1d, 436
  - ts\_divide\_dataset\_1d, 436
  - tt\_divide\_dataset\_1d, 436
- IXMdataset\_1d::IXFdivide\_dataset\_1d, 439
  - at\_divide\_dataset\_1d, 439
  - st\_divide\_dataset\_1d, 439
  - ta\_divide\_dataset\_1d, 439
  - ts\_divide\_dataset\_1d, 439
  - tt\_divide\_dataset\_1d, 439
- IXMdataset\_1d::IXFexp, 450
  - IXFexp\_dataset\_1d, 450
- IXMdataset\_1d::IXFlog, 472
  - IXFlog\_dataset\_1d, 472
- IXMdataset\_1d::IXFminus, 477
  - at\_minus\_dataset\_1d, 477
  - st\_minus\_dataset\_1d, 477
  - ta\_minus\_dataset\_1d, 477
  - ts\_minus\_dataset\_1d, 477
  - tt\_minus\_dataset\_1d, 477
- IXMdataset\_1d::IXFminus\_dataset\_1d, 481
  - at\_minus\_dataset\_1d, 481
  - st\_minus\_dataset\_1d, 481
  - ta\_minus\_dataset\_1d, 481
  - ts\_minus\_dataset\_1d, 481
  - tt\_minus\_dataset\_1d, 481
- IXMdataset\_1d::IXFplus, 502

- at\_plus\_dataset\_1d, 502
- st\_plus\_dataset\_1d, 502
- ta\_plus\_dataset\_1d, 502
- ts\_plus\_dataset\_1d, 502
- tt\_plus\_dataset\_1d, 502
- IXMdataset\_1d::IXFplus\_dataset\_1d, 506
  - at\_plus\_dataset\_1d, 506
  - st\_plus\_dataset\_1d, 506
  - ta\_plus\_dataset\_1d, 506
  - ts\_plus\_dataset\_1d, 506
  - tt\_plus\_dataset\_1d, 506
- IXMdataset\_1d::IXFpower, 517
  - st\_power\_dataset\_1d, 517
  - ts\_power\_dataset\_1d, 517
  - tt\_power\_dataset\_1d, 517
- IXMdataset\_1d::IXFpower\_dataset\_1d, 520
  - st\_power\_dataset\_1d, 520
  - ts\_power\_dataset\_1d, 520
  - tt\_power\_dataset\_1d, 520
- IXMdataset\_1d::IXFsin, 531
  - IXFsin\_dataset\_1d, 531
- IXMdataset\_1d::IXFsinh, 535
  - IXFsinh\_dataset\_1d, 535
- IXMdataset\_1d::IXFtan, 543
  - IXFtan\_dataset\_1d, 543
- IXMdataset\_1d::IXFtanh, 548
  - IXFtanh\_dataset\_1d, 548
- IXMdataset\_1d::IXFtimes, 551
  - at\_times\_dataset\_1d, 551
  - st\_times\_dataset\_1d, 551
  - ta\_times\_dataset\_1d, 551
  - ts\_times\_dataset\_1d, 551
  - tt\_times\_dataset\_1d, 551
- IXMdataset\_1d::IXFtimes\_dataset\_1d, 555
  - at\_times\_dataset\_1d, 555
  - st\_times\_dataset\_1d, 555
  - ta\_times\_dataset\_1d, 555
  - ts\_times\_dataset\_1d, 555
  - tt\_times\_dataset\_1d, 555
- IXMdataset\_1d::IXFunspike, 570
  - IXFunspike\_dataset\_1d, 570
- IXMdataset\_1d::IXTdataset\_1d, 596
  - base, 596
  - error, 597
  - s\_units, 597
  - signal, 596
  - title, 596
  - x, 597
  - x\_distribution, 597
  - x\_units, 597
- IXMdataset\_2d, 59
  - finish\_op\_dataset\_2d, 61
  - integrate\_x\_arr\_dataset\_2d, 61
  - integrate\_x\_dataset\_2d, 61
  - IXFcheck\_dataset\_2d, 62
  - IXFcontract\_arrayd2d\_dataset\_2d, 62
  - IXFcreate\_dataset\_2d, 62
  - IXFcreatexyze\_dataset\_2d, 63
  - IXFderiv1x\_dataset\_2d, 63
  - IXFderiv1y\_dataset\_2d, 63
  - IXFderiv2x\_dataset\_2d, 64
  - IXFderiv2y\_dataset\_2d, 64
  - IXFdestroy\_dataset\_2d, 65
  - IXFeffic\_dataset\_2d, 65
  - IXFexpand\_arrayd1d\_dataset\_2d, 65
  - IXFexpand\_arrayd2d\_dataset\_2d, 65
  - IXFget\_alloc\_dataset\_2d, 66
  - IXFget\_dataset\_2d, 66
  - IXFget\_ptr\_dataset\_2d, 66
  - IXFgetei\_dataset\_2d, 67
  - IXFintegrate\_xy\_dataset\_2d, 67
  - IXFintegrate\_y\_dataset\_2d, 67
  - IXFintXsumY\_dataset\_2d, 68
  - IXFmake\_dataset\_2d, 68
  - IXFmake\_label\_dataset\_2d, 69
  - IXFmoments\_dataset\_2d, 69
  - IXFoperation\_run\_dataset\_2d, 69
  - IXFrebin\_x\_dataset\_2d, 69
  - IXFrebin\_xy\_dataset\_2d, 70
  - IXFrebin\_y\_dataset\_2d, 70
  - IXFrebunch\_x\_dataset\_2d, 71
  - IXFrebunch\_xy\_dataset\_2d, 71
  - IXFrebunch\_y\_dataset\_2d, 71
  - IXFregroup\_x\_dataset\_2d, 72
  - IXFregroup\_xy\_dataset\_2d, 72
  - IXFregroup\_y\_dataset\_2d, 73
  - IXFset\_dataset\_2d, 73
  - IXFshift\_dataset\_2d, 74
  - IXFunspike\_dataset\_2d, 74
  - setup\_binary\_op\_dataset\_2d, 74
  - setup\_unary\_op\_dataset\_2d, 74
  - units\_array, 75
  - units\_array\_array, 75
  - units\_common, 75
  - units\_single\_array, 76
  - x\_hist, 76
  - y\_hist, 76
- IXMdataset\_2d.f90
  - IXD\_DESCRIPTION, 751
  - IXD\_DIM, 751
  - IXD\_DIMS, 751
  - IXD\_DIMXY, 751
  - IXD\_NAME, 751
  - IXD\_OPERATION, 751
  - IXD\_SQTYPE, 751
  - IXD\_TYPE, 751
- IXMdataset\_2d::IXFcos, 423
  - IXFcos\_dataset\_2d, 423

- IXMdataset\_2d::IXFcosh, 427  
   IXFcosh\_dataset\_2d, 427  
 IXMdataset\_2d::IXFdivide, 437  
   at\_divide\_dataset\_2d, 437  
   at\_t\_divide\_dataset\_2d, 437  
   st\_divide\_dataset\_2d, 437  
   t\_at\_divide\_dataset\_2d, 437  
   ta\_divide\_dataset\_2d, 437  
   ts\_divide\_dataset\_2d, 437  
   tt\_divide\_dataset\_2d, 437  
 IXMdataset\_2d::IXFdivide\_dataset\_2d, 440  
   at\_divide\_dataset\_2d, 440  
   at\_t\_divide\_dataset\_2d, 440  
   st\_divide\_dataset\_2d, 440  
   t\_at\_divide\_dataset\_2d, 440  
   ta\_divide\_dataset\_2d, 440  
   ts\_divide\_dataset\_2d, 440  
   tt\_divide\_dataset\_2d, 440  
 IXMdataset\_2d::IXFdivide\_X, 443  
   IXFarray\_X\_divide\_dataset\_2d, 443  
   IXFdataset\_1d\_X\_divide\_dataset\_2d,  
   443  
 IXMdataset\_2d::IXFdivide\_X\_dataset\_2d,  
   444  
   IXFarray\_X\_divide\_dataset\_2d, 444  
   IXFdataset\_1d\_X\_divide\_dataset\_2d,  
   444  
 IXMdataset\_2d::IXFdivide\_Y, 445  
   IXFarray\_Y\_divide\_dataset\_2d, 445  
   IXFdataset\_1d\_Y\_divide\_dataset\_2d,  
   445  
 IXMdataset\_2d::IXFdivide\_Y\_dataset\_2d,  
   446  
   IXFarray\_Y\_divide\_dataset\_2d, 446  
   IXFdataset\_1d\_Y\_divide\_dataset\_2d,  
   446  
 IXMdataset\_2d::IXFexp, 451  
   IXFexp\_dataset\_2d, 451  
 IXMdataset\_2d::IXFintegrate\_x\_dataset\_2d,  
   469  
   integrate\_x\_arr\_dataset\_2d, 469  
   integrate\_x\_dataset\_2d, 469  
 IXMdataset\_2d::IXFlog, 473  
   IXFlog\_dataset\_2d, 473  
 IXMdataset\_2d::IXFminus, 478  
   at\_minus\_dataset\_2d, 478  
   at\_t\_minus\_dataset\_2d, 478  
   st\_minus\_dataset\_2d, 478  
   t\_at\_minus\_dataset\_2d, 478  
   ta\_minus\_dataset\_2d, 478  
   ts\_minus\_dataset\_2d, 478  
   tt\_minus\_dataset\_2d, 478  
 IXMdataset\_2d::IXFminus\_dataset\_2d, 482  
   at\_minus\_dataset\_2d, 482  
   at\_t\_minus\_dataset\_2d, 482  
   st\_minus\_dataset\_2d, 482  
   t\_at\_minus\_dataset\_2d, 482  
   ta\_minus\_dataset\_2d, 482  
   ts\_minus\_dataset\_2d, 482  
   tt\_minus\_dataset\_2d, 482  
 IXMdataset\_2d::IXFminus\_X, 485  
   IXFarray\_X\_minus\_dataset\_2d, 485  
   IXFdataset\_1d\_X\_minus\_dataset\_2d,  
   485  
 IXMdataset\_2d::IXFminus\_X\_dataset\_2d,  
   486  
   IXFarray\_X\_minus\_dataset\_2d, 486  
   IXFdataset\_1d\_X\_minus\_dataset\_2d,  
   486  
 IXMdataset\_2d::IXFminus\_Y, 487  
   IXFarray\_Y\_minus\_dataset\_2d, 487  
   IXFdataset\_1d\_Y\_minus\_dataset\_2d,  
   487  
 IXMdataset\_2d::IXFminus\_Y\_dataset\_2d,  
   488  
   IXFarray\_Y\_minus\_dataset\_2d, 488  
   IXFdataset\_1d\_Y\_minus\_dataset\_2d,  
   488  
 IXMdataset\_2d::IXFplus, 503  
   at\_Plus\_dataset\_2d, 503  
   at\_t\_plus\_dataset\_2d, 503  
   st\_plus\_dataset\_2d, 503  
   t\_at\_plus\_dataset\_2d, 503  
   ta\_Plus\_dataset\_2d, 503  
   ts\_plus\_dataset\_2d, 503  
   tt\_plus\_dataset\_2d, 503  
 IXMdataset\_2d::IXFplus\_dataset\_2d, 507  
   at\_plus\_dataset\_2d, 507  
   at\_t\_plus\_dataset\_2d, 507  
   st\_plus\_dataset\_2d, 507  
   t\_at\_plus\_dataset\_2d, 507  
   ta\_Plus\_dataset\_2d, 507  
   ts\_plus\_dataset\_2d, 507  
   tt\_plus\_dataset\_2d, 507  
 IXMdataset\_2d::IXFplus\_X, 510  
   IXFarray\_X\_plus\_dataset\_2d, 510  
   IXFdataset\_1d\_X\_plus\_dataset\_2d, 510  
 IXMdataset\_2d::IXFplus\_X\_dataset\_2d, 511  
   IXFarray\_X\_plus\_dataset\_2d, 511  
   IXFdataset\_1d\_X\_plus\_dataset\_2d, 511  
 IXMdataset\_2d::IXFplus\_Y, 512  
   IXFarray\_Y\_plus\_dataset\_2d, 512  
   IXFdataset\_1d\_Y\_plus\_dataset\_2d, 512  
 IXMdataset\_2d::IXFplus\_Y\_dataset\_2d, 513  
   IXFarray\_Y\_plus\_dataset\_2d, 513  
   IXFdataset\_1d\_Y\_plus\_dataset\_2d, 513  
 IXMdataset\_2d::IXFpower, 518  
   st\_power\_dataset\_2d, 518

- ts\_power\_dataset\_2d, 518
- tt\_power\_dataset\_2d, 518
- IXMdataset\_2d::IXFpower\_dataset\_2d, 521
  - st\_power\_dataset\_2d, 521
  - ts\_power\_dataset\_2d, 521
  - tt\_power\_dataset\_2d, 521
- IXMdataset\_2d::IXFsin, 532
  - IXFsin\_dataset\_2d, 532
- IXMdataset\_2d::IXFsinh, 536
  - IXFsinh\_dataset\_2d, 536
- IXMdataset\_2d::IXFtan, 544
  - IXFtan\_dataset\_2d, 544
- IXMdataset\_2d::IXFtanh, 549
  - IXFtanh\_dataset\_2d, 549
- IXMdataset\_2d::IXFtimes, 552
  - at\_t\_times\_dataset\_2d, 552
  - at\_times\_dataset\_2d, 552
  - st\_times\_dataset\_2d, 552
  - t\_at\_times\_dataset\_2d, 552
  - ta\_times\_dataset\_2d, 552
  - ts\_times\_dataset\_2d, 552
  - tt\_times\_dataset\_2d, 552
- IXMdataset\_2d::IXFtimes\_dataset\_2d, 556
  - at\_t\_times\_dataset\_2d, 556
  - at\_times\_dataset\_2d, 556
  - st\_times\_dataset\_2d, 556
  - t\_at\_times\_dataset\_2d, 556
  - ta\_times\_dataset\_2d, 556
  - ts\_times\_dataset\_2d, 556
  - tt\_times\_dataset\_2d, 556
- IXMdataset\_2d::IXFtimes\_X, 559
  - IXFarray\_X\_times\_dataset\_2d, 559
  - IXFdataset\_1d\_X\_times\_dataset\_2d, 559
- IXMdataset\_2d::IXFtimes\_X\_dataset\_2d, 560
  - IXFarray\_X\_times\_dataset\_2d, 560
  - IXFdataset\_1d\_X\_times\_dataset\_2d, 560
- IXMdataset\_2d::IXFtimes\_Y, 561
  - IXFarray\_Y\_times\_dataset\_2d, 561
  - IXFdataset\_1d\_Y\_times\_dataset\_2d, 561
- IXMdataset\_2d::IXFtimes\_Y\_dataset\_2d, 562
  - IXFarray\_Y\_times\_dataset\_2d, 562
  - IXFdataset\_1d\_Y\_times\_dataset\_2d, 562
- IXMdataset\_2d::IXFunits, 566
  - units\_array, 566
  - units\_array\_array, 566
  - units\_single\_array, 566
- IXMdataset\_2d::IXFunits\_dataset\_2d, 567
  - units\_array, 567
  - units\_array\_array, 567
  - units\_single\_array, 567
- IXMdataset\_2d::IXFunspike, 571
  - IXFunspike\_dataset\_2d, 571
- IXMdataset\_2d::IXTdataset\_2d, 598
  - base, 598
  - error, 599
  - s\_units, 599
  - signal, 598
  - title, 598
  - x, 599
  - x\_distribution, 599
  - x\_units, 599
  - y, 599
  - y\_distribution, 599
  - y\_units, 599
- IXMdataset\_3d, 77
  - IXFcheck\_dataset\_3d, 77
  - IXFcreate\_dataset\_3d, 77
  - IXFdestroy\_dataset\_3d, 77
  - IXFget\_dataset\_3d, 77
  - IXFoperation\_run\_dataset\_3d, 78
  - IXFset\_dataset\_3d, 78
- IXMdataset\_3d.f90
  - IXD\_DESCRIPTION, 752
  - IXD\_SQTYPE, 752
  - IXD\_TYPE, 752
- IXMdataset\_3d::IXTdataset\_3d, 600
  - base, 600
  - error, 600
  - s\_units, 600
  - signal, 600
  - title, 600
  - x, 600
  - x\_distribution, 601
  - x\_units, 601
  - y, 601
  - y\_distribution, 601
  - y\_units, 601
  - z, 601
  - z\_distribution, 601
  - z\_units, 601
- IXMdataset\_4d, 79
  - IXFcheck\_dataset\_4d, 79
  - IXFcreate\_dataset\_4d, 79
  - IXFdestroy\_dataset\_4d, 79
  - IXFget\_dataset\_4d, 80
  - IXFoperation\_run\_dataset\_4d, 80
  - IXFset\_dataset\_4d, 80
- IXMdataset\_4d.f90
  - IXD\_DESCRIPTION, 753
  - IXD\_SQTYPE, 753
  - IXD\_TYPE, 753
- IXMdataset\_4d::IXTdataset\_4d, 602

- base, 603
- error, 603
- s\_units, 603
- signal, 603
- title, 603
- x1, 603
- x1\_distribution, 603
- x1\_units, 603
- x2, 603
- x2\_distribution, 604
- x2\_units, 603
- x3, 604
- x3\_distribution, 604
- x3\_units, 604
- x4, 604
- x4\_distribution, 604
- x4\_units, 604
- IXMdataset\_common, 81
- IXMdataset\_nd, 82
- IXMdataset\_nd::IXTdataset\_nd, 605
  - base, 605
  - e, 606
  - nx, 605
  - s, 606
  - s\_label, 606
  - title, 605
  - x, 606
  - x\_distribution, 606
  - x\_histogram, 606
  - x\_label, 606
  - x\_units, 606
- IXMdatum, 83
  - IXFcheck\_datum, 83
  - IXFcos\_Datum, 83
  - IXFcosh\_Datum, 84
  - IXFcreate\_datum, 84
  - IXFdestroy\_datum, 84
  - IXFexp\_Datum, 84
  - IXFget\_datum, 84
  - IXFlog\_Datum, 84
  - IXFoperation\_run\_datum, 85
  - IXFset\_datum, 85
  - IXFsin\_Datum, 85
  - IXFsinh\_Datum, 85
  - IXFtan\_Datum, 85
  - IXFtanh\_Datum, 85
- IXMdatum.f90
  - IXD\_DESCRIPTION, 757
  - IXD\_NO\_BASE, 757
  - IXD\_SQTYPE, 757
  - IXD\_TYPE, 757
- IXMdatum::IXFcos, 424
  - IXFcos\_datum, 424
- IXMdatum::IXFcosh, 428
  - IXFcosh\_datum, 428
- IXMdatum::IXFdivide, 438
  - datumDivideSW, 438
  - datumDivideWS, 438
  - datumDivideWW, 438
- IXMdatum::IXFdivide\_Datum, 441
  - datumDivideSW, 441
  - datumDivideWS, 441
  - datumDivideWW, 441
- IXMdatum::IXFexp, 452
  - IXFexp\_datum, 452
- IXMdatum::IXFlog, 474
  - IXFlog\_datum, 474
- IXMdatum::IXFminus, 479
  - datumMinusSW, 479
  - datumMinusWS, 479
  - datumMinusWW, 479
- IXMdatum::IXFminus\_Datum, 483
  - datumMinusSW, 483
  - datumMinusWS, 483
  - datumMinusWW, 483
- IXMdatum::IXFplus, 504
  - datumPlusSW, 504
  - datumPlusWS, 504
  - datumPlusWW, 504
- IXMdatum::IXFplus\_Datum, 508
  - datumPlusSW, 508
  - datumPlusWS, 508
  - datumPlusWW, 508
- IXMdatum::IXFpower, 519
  - datumPowerSW, 519
  - datumPowerWS, 519
  - datumPowerWW, 519
- IXMdatum::IXFpower\_Datum, 522
  - datumPowerSW, 522
  - datumPowerWS, 522
  - datumPowerWW, 522
- IXMdatum::IXFsin, 533
  - IXFsin\_datum, 533
- IXMdatum::IXFsinh, 537
  - IXFsinh\_datum, 537
- IXMdatum::IXFtan, 546
  - IXFtan\_datum, 546
- IXMdatum::IXFtanh, 550
  - IXFtanh\_datum, 550
- IXMdatum::IXFtimes, 553
  - datumTimesSW, 553
  - datumTimesWS, 553
  - datumTimesWW, 553
- IXMdatum::IXFtimes\_Datum, 557
  - datumTimesSW, 557
  - datumTimesWS, 557
  - datumTimesWW, 557
- IXMdatum::IXTdatum, 607

- err, 607
- val, 607
- IXMdatum\_array, 86
  - IXFcheck\_datum\_array, 86
  - IXFcreate\_datum\_array, 86
  - IXFdestroy\_datum\_array, 87
  - IXFget\_alloc\_datum\_array, 87
  - IXFget\_datum\_array, 87
  - IXFget\_ptr\_datum\_array, 87
  - IXFoperation\_run\_datum\_array, 87
  - IXFset\_datum\_array, 88
  - IXFSize\_Datum\_array, 88
- IXMdatum\_array.f90
  - IXD\_DESCRIPTION, 761
  - IXD\_NAME, 761
  - IXD\_OPERATION, 761
  - IXD\_SQTYPE, 761
  - IXD\_TYPE, 761
- IXMdatum\_array::IXFcos, 420
  - IXFcos\_datum\_array, 420
- IXMdatum\_array::IXFcosh, 425
  - IXFsinh\_datum\_array, 425
- IXMdatum\_array::IXFdivide, 435
  - st\_Divide\_datum\_array, 435
  - ts\_Divide\_datum\_array, 435
  - tt\_Divide\_datum\_array, 435
- IXMdatum\_array::IXFdivide\_Datum\_array, 442
  - st\_Divide\_datum\_array, 442
  - ts\_Divide\_datum\_array, 442
  - tt\_Divide\_datum\_array, 442
- IXMdatum\_array::IXFexp, 449
  - IXFexp\_datum\_array, 449
- IXMdatum\_array::IXFlog, 471
  - IXFlog\_datum\_array, 471
- IXMdatum\_array::IXFminus, 480
  - st\_Minus\_datum\_array, 480
  - ts\_Minus\_datum\_array, 480
  - tt\_Minus\_datum\_array, 480
- IXMdatum\_array::IXFminus\_datum\_array, 484
  - st\_Minus\_datum\_array, 484
  - ts\_Minus\_datum\_array, 484
  - tt\_Minus\_datum\_array, 484
- IXMdatum\_array::IXFplus, 505
  - st\_Plus\_datum\_array, 505
  - ts\_Plus\_datum\_array, 505
  - tt\_Plus\_datum\_array, 505
- IXMdatum\_array::IXFplus\_Datum\_array, 509
  - st\_Plus\_datum\_array, 509
  - ts\_Plus\_datum\_array, 509
  - tt\_Plus\_datum\_array, 509
- IXMdatum\_array::IXFpower, 516
  - st\_Power\_datum\_array, 516
  - ts\_Power\_datum\_array, 516
  - tt\_Power\_datum\_array, 516
- IXMdatum\_array::IXFpower\_Datum\_array, 523
  - st\_Power\_datum\_array, 523
  - ts\_Power\_datum\_array, 523
  - tt\_Power\_datum\_array, 523
- IXMdatum\_array::IXFsin, 530
  - IXFsin\_datum\_array, 530
- IXMdatum\_array::IXFsinh, 534
  - IXFsinh\_datum\_array, 534
- IXMdatum\_array::IXFtan, 545
  - IXFtan\_datum\_array, 545
- IXMdatum\_array::IXFtanh, 547
  - IXFtanh\_datum\_array, 547
- IXMdatum\_array::IXFtimes, 554
  - st\_Times\_datum\_array, 554
  - ts\_Times\_datum\_array, 554
  - tt\_Times\_datum\_array, 554
- IXMdatum\_array::IXFtimes\_Datum\_array, 558
  - st\_Times\_datum\_array, 558
  - ts\_Times\_datum\_array, 558
  - tt\_Times\_datum\_array, 558
- IXMdatum\_array::IXTdatum\_array, 608
  - base, 608
  - error, 608
  - signal, 608
- IXMderivative, 89
  - IXFderiv\_1\_1d, 89
  - IXFderiv\_2\_1d, 89
- IXMdet\_he3, 90
  - IXFcheck\_det\_he3, 90
  - IXFcreate\_det\_he3, 90
  - IXFdestroy\_det\_he3, 90
  - IXFget\_det\_he3, 90
  - IXFoperation\_run\_det\_he3, 91
  - IXFset\_det\_he3, 91
- IXMdet\_he3.f90
  - IXD\_DESCRIPTION, 762
  - IXD\_SQTYPE, 762
  - IXD\_TYPE, 762
- IXMdet\_he3::IXTdet\_he3, 609
  - base, 609
  - checksum, 609
  - gas\_pressure, 609
  - wall\_thickness, 609
- IXMdet\_solid, 92
  - IXFcheck\_det\_solid, 92
  - IXFcreate\_det\_solid, 92
  - IXFdestroy\_det\_solid, 92
  - IXFget\_det\_solid, 92
  - IXFoperation\_run\_det\_solid, 93

- IXFset\_det\_solid, 93
- IXMdet\_solid.f90
  - IXD\_DESCRIPTION, 763
  - IXD\_SQTYPE, 763
  - IXD\_TYPE, 763
- IXMdet\_solid::IXTdet\_solid, 611
  - base, 611
  - checksum, 611
  - macro\_xs, 611
- IXMdetector, 94
  - IXFalloc\_section\_detector, 95
  - IXFaverage\_detector, 95
  - IXFavgdeadtime\_detector, 95
  - IXFavgdelaytime\_detector, 95
  - IXFavgL2\_detector, 96
  - IXFavgphi\_detector, 96
  - IXFavgtheta\_detector, 96
  - IXFcheck\_detector, 96
  - IXFcreate\_detector, 97
  - IXFdecref\_detector, 97
  - IXFdestroy\_detector, 97
  - IXFget\_alloc\_detector, 97
  - IXFget\_detector, 98
  - IXFget\_ptr\_detector, 98
  - IXFincref\_detector, 99
  - IXFoperation\_run\_detector, 99
  - IXFpopulate\_detector, 99
  - IXFset\_detector, 99
  - IXFupdate\_detector, 100
- IXMdetector.f90
  - IXD\_DESCRIPTION, 765
  - IXD\_SQTYPE, 765
  - IXD\_TYPE, 765
- IXMdetector::IXTdetector, 612
  - base, 613
  - checksum, 613
  - dead\_time, 613
  - delay\_time, 613
  - det\_he3, 614
  - det\_no, 613
  - det\_solid, 614
  - det\_type, 613
  - group\_index, 613
  - L2, 613
  - phi, 613
  - ref\_count, 613
  - theta, 613
  - type\_index, 614
- IXMdiffraction\_instrument, 101
  - diff\_inst, 103
  - get\_emode, 101
  - get\_ptr, 101
  - IXFcheck\_diffraction\_instrument, 101
  - IXFcreate\_diffraction\_instrument, 101
  - IXFdestroy\_diffraction\_instrument, 102
  - IXFget\_diffraction\_instrument, 102
  - IXFget\_ptr\_diffraction\_instrument, 102
  - IXFoperation\_run\_diffraction\_instrument, 102
  - IXFpopulate\_diffraction\_instrument, 102
  - IXFset\_diffraction\_instrument, 102
- IXMdiffraction\_instrument.f90
  - IXD\_DESCRIPTION, 767
  - IXD\_SQTYPE, 767
  - IXD\_TYPE, 767
- IXMdiffraction\_instrument::IXFget\_emode, 460
  - get\_emode, 460
- IXMdiffraction\_instrument::IXFget\_ptr, 463
  - get\_ptr, 463
- IXMdiffraction\_instrument::IXTdiffraction\_instrument, 615
  - base, 615
- IXMeffdet\_index, 104
  - IXFcheck\_effdet\_index, 104
  - IXFcreate\_effdet\_index, 104
  - IXFdestroy\_effdet\_index, 104
  - IXFget\_alloc\_effdet\_index, 104
  - IXFget\_effdet\_index, 105
  - IXFget\_ptr\_effdet\_index, 105
  - IXFoperation\_run\_effdet\_index, 105
  - IXFpopulate\_effdet\_index, 105
  - IXFset\_effdet\_index, 106
- IXMeffdet\_index.f90
  - IXD\_DESCRIPTION, 769
  - IXD\_SQTYPE, 769
  - IXD\_TYPE, 769
- IXMeffdet\_index::IXTeffdet\_index, 616
  - base, 616
  - good\_index, 616
  - total\_index, 616
- IXMefficiency, 107
  - EFF, 107
  - EFFCHB, 107
- IXMerrorcodes, 108
  - IXCerr\_filenotfound, 108
  - IXCerr\_invparam, 108
  - IXCerr\_max\_name\_len, 108
  - IXCerr\_names, 108
  - IXCerr\_outofmem, 108
  - IXCerr\_unknown, 108
  - IXCfacility\_bindings, 108
  - IXCfacility\_file, 109
  - IXCfacility\_libisis, 109
  - IXCfacility\_max\_name\_len, 109
  - IXCfacility\_memory, 109
  - IXCfacility\_names, 109
  - IXCfacility\_none, 109



- IXCfacility\_wrapvar, 109
- IXMfermi\_chopper, 110
  - IXFcheck\_Fermi\_chopper, 110
  - IXFcreate\_Fermi\_chopper, 110
  - IXFdestroy\_fermi\_chopper, 111
  - IXFget\_Fermi\_chopper, 111
  - IXFoperation\_run\_fermi\_chopper, 111
  - IXFset\_Fermi\_chopper, 111
  - IXFtransmission\_gen\_fermi\_chopper, 112
  - IXFtransmission\_internal\_ei\_fermi\_chopper, 112
  - IXFtransmission\_internal\_ei\_odd\_fermi\_chopper, 112
  - IXFtransmission\_scalar\_ei\_fermi\_chopper, 112
  - IXFtransmission\_scalar\_ei\_odd\_fermi\_chopper, 113
  - IXFtransmission\_vector\_ei\_fermi\_chopper, 113
  - IXFtransmission\_vector\_ei\_odd\_fermi\_chopper, 113
  - IXFvariance\_gen\_fermi\_chopper, 113
  - IXFvariance\_internal\_ei\_fermi\_chopper, 114
  - IXFvariance\_internal\_ei\_odd\_fermi\_chopper, 114
  - IXFvariance\_scalar\_ei\_fermi\_chopper, 114
  - IXFvariance\_scalar\_ei\_odd\_fermi\_chopper, 114
  - IXFvariance\_vector\_ei\_fermi\_chopper, 115
  - IXFvariance\_vector\_ei\_odd\_fermi\_chopper, 115
- IXMfermi\_chopper.f90
  - IXD\_DESCRIPTION, 771
  - IXD\_SQTYPE, 771
  - IXD\_TYPE, 771
- IXMfermi\_chopper::IXFtransmission\_fermi\_chopper, 563
- IXMfermi\_chopper::IXFtransmission\_odd\_fermi\_chopper, 564
- IXMfermi\_chopper::IXFvariance\_fermi\_chopper, 577
- IXMfermi\_chopper::IXFvariance\_odd\_fermi\_chopper, 578
- IXMfermi\_chopper::IXTfermi\_chopper, 617
  - base, 617
  - blade\_width, 618
  - curvature, 618
  - distance, 618
  - energy, 618
  - frequency, 618
  - height, 618
  - name, 617
  - period, 618
  - radius, 618
  - slit\_spacing, 618
  - slit\_width, 618
  - width, 618
- IXMfileio, 116
  - IXBfileCloseGroup, 117
  - IXBfileMakeGroup, 117
  - IXBfileOpenGroup, 117
  - IXBfileReadChar, 117
  - IXBfileReadInteger, 118
  - IXBfileReadLogical, 118
  - IXBfileReadReal, 118
  - IXBfileWriteChar, 118
  - IXBfileWriteInteger, 118
  - IXBfileWriteLogical, 119
  - IXBfileWriteReal, 119
  - IXBfindGroup, 119
  - IXC\_CREATE, 121
  - IXC\_CREATEXML, 121
  - IXC\_RDWR, 121
  - IXC\_READ, 121
  - IXC\_WRITE, 121
  - IXCfile\_type\_ascii, 121
  - IXCfile\_type\_binary, 122
  - IXFfile\_check\_type, 120
  - IXFfile\_close, 120
  - IXFfile\_get\_type, 120
  - IXFfile\_open, 120
  - IXFfile\_read\_fileio, 120
  - IXFfile\_write\_fileio, 120
  - nexus\_error, 121
- IXMfileio.f90
  - IXD\_DIMS, 774
  - IXD\_NAME, 774
  - IXD\_TYPE, 774
  - IXD\_TYPE\_TEMP, 774
- IXMfileio::IXBfileRead, 384
- IXMfileio::IXBfileRead
  - IXBfileReadc1, 385
  - IXBfileReadChar, 384
  - IXBfileReaddp1, 384
  - IXBfileReaddp2, 385
  - IXBfileReaddp3, 385
  - IXBfileReaddp4, 385
  - IXBfileReadi4b1, 385
  - IXBfileReadi4b2, 385
  - IXBfileReadi4b3, 385
  - IXBfileReadi4b4, 385
  - IXBfileReadInteger, 384
  - IXBfileReadLogical, 384
  - IXBfileReadReal, 384

- IXMfileio::IXBfileReadAlloc, 386
- IXMfileio::IXBfileReadAlloc
  - IXBfileReadAlloc1, 386
  - IXBfileReadAllocdp1, 386
  - IXBfileReadAllocdp2, 386
  - IXBfileReadAllocdp3, 386
  - IXBfileReadAllocdp4, 386
  - IXBfileReadAlloci4b1, 386
  - IXBfileReadAlloci4b2, 386
  - IXBfileReadAlloci4b3, 386
  - IXBfileReadAlloci4b4, 386
- IXMfileio::IXBfileReadPtr, 387
- IXMfileio::IXBfileReadPtr
  - IXBfileReadPtrdp1, 387
  - IXBfileReadPtrdp2, 387
  - IXBfileReadPtrdp3, 387
  - IXBfileReadPtrdp4, 387
  - IXBfileReadPtri4b1, 387
  - IXBfileReadPtri4b2, 387
  - IXBfileReadPtri4b3, 387
  - IXBfileReadPtri4b4, 387
- IXMfileio::IXBfileWrite, 388
- IXMfileio::IXBfileWrite
  - IXBfileWritec1, 389
  - IXBfileWriteChar, 388
  - IXBfileWritedp1, 388
  - IXBfileWritedp2, 389
  - IXBfileWritedp3, 389
  - IXBfileWritedp4, 389
  - IXBfileWritei4b1, 389
  - IXBfileWritei4b2, 389
  - IXBfileWritei4b3, 389
  - IXBfileWritei4b4, 389
  - IXBfileWriteInteger, 388
  - IXBfileWriteLogical, 388
  - IXBfileWriteReal, 388
- IXMfileio::IXFfile\_read, 453
  - IXFfile\_read\_fileio, 453
- IXMfileio::IXFfile\_type, 456
  - IXFfile\_check\_type, 456
- IXMfileio::IXFfile\_write, 457
  - IXFfile\_write\_fileio, 457
- IXMfileio::IXTfileio, 620
  - file\_id, 620
  - file\_name, 620
  - mode, 620
- IXMgeometry, 123
  - IXFarea\_vertices\_geometry, 123
  - IXFcheck\_geometry, 123
  - IXFcreate\_attributes\_geometry, 124
  - IXFcreate\_class\_geometry, 124
  - IXFcreate\_geometry, 124
  - IXFdestroy\_geometry, 125
  - IXFget\_geometry, 125
  - IXFoperation\_run\_geometry, 125
  - IXFprojarea\_vertices\_geometry, 125
  - IXFset\_geometry, 126
  - IXFsolid\_angle\_geometry, 126
  - IXFvolume\_geometry, 127
- IXMgeometry.f90
  - IXD\_DESCRIPTION, 776
  - IXD\_NO\_BASE, 776
  - IXD\_SQTYPE, 776
  - IXD\_TYPE, 776
- IXMgeometry::IXFsolid\_angle, 541
- IXMgeometry::IXFvolume, 580
- IXMgeometry::IXTgeometry, 621
  - orientation, 621
  - shape, 621
  - translation, 621
- IXMgroup, 128
  - IXCinvalid\_id\_group, 129
  - IXCno\_parent\_group, 129
  - IXFcheck\_group, 128
  - IXFcreate\_group, 128
  - IXFdestroy\_group, 128
  - IXFget\_group, 128
  - IXFoperation\_run\_group, 129
  - IXFset\_group, 129
- IXMgroup.f90
  - IXD\_DESCRIPTION, 778
  - IXD\_SQTYPE, 778
  - IXD\_TYPE, 778
- IXMgroup::IXTgroup, 622
  - base, 622
  - id, 622
  - name, 622
  - parent, 622
- IXMgroups, 130
  - index\_byid, 130
  - index\_byname, 130
  - IXFadd\_groups, 131
  - IXFcheck\_groups, 131
  - IXFcreate\_groups, 131
  - IXFdestroy\_groups, 131
  - IXFget\_groups, 131
  - IXFid\_groups, 131
  - IXFname\_groups, 132
  - IXFoperation\_run\_groups, 132
  - IXFprint\_groups, 132
  - IXFset\_groups, 132
  - member\_byid, 132
  - member\_byname, 133
  - member\_list\_byid, 133
  - member\_list\_byname, 133
  - parent\_byid, 133
  - parent\_byname, 134
  - parent\_id\_byid, 134

- parent\_id\_byname, 134
- parent\_list\_byid, 134
- parent\_list\_byname, 135
- remove\_byid, 135
- remove\_byname, 135
- IXMgroups.f90
  - IXD\_DESCRIPTION, 780
  - IXD\_SQTYPE, 780
  - IXD\_TYPE, 780
- IXMgroups::IXFis\_member\_groups, 470
  - member\_byid, 470
  - member\_byname, 470
- IXMgroups::IXFmember\_list\_groups, 476
  - member\_list\_byid, 476
  - member\_list\_byname, 476
- IXMgroups::IXFparent\_groups, 499
- IXMgroups::IXFparent\_id\_groups, 500
  - parent\_id\_byid, 500
  - parent\_id\_byname, 500
- IXMgroups::IXFparent\_list\_groups, 501
  - parent\_list\_byid, 501
  - parent\_list\_byname, 501
- IXMgroups::IXFremove\_groups, 525
  - remove\_byid, 525
  - remove\_byname, 525
- IXMgroups::IXTgroups, 624
  - base, 624
  - list, 624
  - n, 624
- IXMhistory, 136
  - IXChist\_initlength, 138
  - IXFadditem\_history, 136
  - IXFcheck\_array\_history, 136
  - IXFcheck\_history, 136
  - IXFcreate\_history, 136
  - IXFdestroy\_history, 137
  - IXFfile\_read\_history, 137
  - IXFfile\_write\_history, 137
  - IXFget\_history, 137
  - IXFget\_ptr\_history, 138
  - IXFset\_history, 138
- IXMhistory::IXFcheck, 416
  - IXFcheck\_array\_history, 416
  - IXFcheck\_history, 416
- IXMhistory::IXFfile\_read, 455
  - IXFfile\_read\_history, 455
- IXMhistory::IXFfile\_write, 459
  - IXFfile\_write\_history, 459
- IXMhistory::IXThistory, 625
  - counter, 625
  - entry, 625
- IXMindex, 139
  - lower\_index\_dp, 139
  - lower\_index\_i4b, 139
  - lower\_index\_sp, 139
  - upper\_index\_dp, 139
  - upper\_index\_i4b, 139
  - upper\_index\_sp, 139
- IXMindex::IXFlower\_index, 475
- IXMindex::IXFupper\_index, 576
- IXMinput\_source, 140
  - IXCtype\_isisraw, 142
  - IXCtype\_nexus, 142
  - IXCtype\_unknown, 142
  - IXFcheck\_input\_source, 140
  - IXFcreate\_input\_source, 140
  - IXFdestroy\_input\_source, 140
  - IXFget\_input\_source, 140
  - IXFoperation\_run\_input\_source, 141
  - IXFset\_input\_source, 141
  - size\_i, 141
  - size\_i\_array, 141
- IXMinput\_source.f90
  - IXD\_DESCRIPTION, 783
  - IXD\_SQTYPE, 783
  - IXD\_TYPE, 783
- IXMinput\_source::IXFsize, 538
  - size\_i, 538
  - size\_i\_array, 538
- IXMinput\_source::IXTinput\_source, 626
  - base, 626
  - file\_type, 626
  - n, 626
  - sources, 626
- IXMinstrument, 143
  - finduseddetectors, 143
  - findusedspectra, 143
  - IXFcheck\_instrument, 144
  - IXFcompare\_instrument, 144
  - IXFcreate\_instrument, 144
  - IXFdestroy\_instrument, 144
  - IXFfei\_info\_instrument, 144
  - IXFget\_instrument, 145
  - IXFget\_ptr\_instrument, 145
  - IXFoperation\_run\_instrument, 145
  - IXFpopulate\_instrument, 145
  - IXFset\_instrument, 146
  - IXFunitsinfo\_instrument, 146
  - IXFwhitecompare\_instrument, 147
- IXMinstrument.f90
  - IXD\_DESCRIPTION, 785
  - IXD\_SQTYPE, 785
  - IXD\_TYPE, 785
- IXMinstrument::IXTinstrument, 628
  - apertures, 629
  - attenuators, 629
  - base, 628
  - ci, 629

- detector, 629
- di, 629
- inst\_type, 628
- moderator, 629
- name, 628
- source, 629
- spectra, 629
- IXMintegrate, 148
  - IXFintegrate\_1d\_hist, 148
  - IXFintegrate\_1d\_points, 148
  - IXFintegrate\_2d\_hist, 148
- IXMio, 150
  - IXFwrite\_line, 150
  - IXFwrite\_line\_indent, 150
- IXMio.f90
  - IXIwrite\_line, 858
- IXMisis\_raw\_file, 151
  - global\_raw\_status, 159
  - IXFcheck\_ISIS\_Raw\_File, 151
  - IXFcreate\_ISIS\_Raw\_File, 151
  - IXFdestroy\_isis\_raw\_file, 152
  - IXFget\_char, 152
  - IXFget\_data\_i1, 152
  - IXFget\_data\_i2, 152
  - IXFget\_dp, 153
  - IXFget\_dp1, 153
  - IXFget\_dp2, 153
  - IXFget\_int, 153
  - IXFget\_int1, 154
  - IXFget\_int2, 154
  - IXFget\_ISIS\_Raw\_File, 154
  - IXFget\_real, 154
  - IXFget\_real1, 155
  - IXFget\_real2, 155
  - IXFget\_spectrum\_array\_d1, 155
  - IXFget\_spectrum\_array\_d2, 156
  - IXFget\_spectrum\_d1, 156
  - IXFget\_spectrum\_d2, 157
  - IXFopen\_raw, 157
  - IXFopen\_raw\_handle, 158
  - IXFoperation\_run\_ISIS\_Raw\_File, 158
  - IXFset\_ISIS\_Raw\_File, 158
  - IXFsize\_raw\_i, 158
  - IXFsize\_raw\_i\_array, 158
- IXMisis\_raw\_file.f90
  - BYTE\_REL\_EXP\_N, 788
  - CLOSE\_DATA\_FILE, 788
  - CRPT\_ACCESS, 788
  - DAE\_ACCESS, 788
  - DEFAULT\_FILE\_NAME, 789
  - FASTGET\_INIT, 789
  - FASTREAD\_DATA, 789
  - FERROR\_ADD, 790
  - FORT\_FILE, 790
  - GET\_CRPT\_SPECIALS, 790
  - GETDAT, 791
  - GETPARC, 791
  - GETPARI, 791
  - GETPARR, 792
  - GETRUN, 792
  - GETSECT, 793
  - IXD\_DESCRIPTION, 788
  - IXD\_NO\_BASE, 788
  - IXD\_SQTYPE, 788
  - IXD\_TYPE, 788
  - OPEN\_DATA\_FILE, 793
  - OPEN\_FILE, 794
  - READ\_DATA, 794
  - TRUELEN, 795
  - UPDATE\_CRPT\_SPECIALS, 795
- IXMisis\_raw\_file::IXFget\_raw, 465
  - IXFget\_char, 466
  - IXFget\_data\_i1, 467
  - IXFget\_data\_i2, 467
  - IXFget\_dp, 466
  - IXFget\_dp1, 466
  - IXFget\_dp2, 466
  - IXFget\_int, 465
  - IXFget\_int1, 465
  - IXFget\_int2, 466
  - IXFget\_real, 465
  - IXFget\_real1, 465
  - IXFget\_real2, 465
  - IXFget\_spectrum\_array\_d1, 466
  - IXFget\_spectrum\_array\_d2, 467
  - IXFget\_spectrum\_d1, 466
  - IXFget\_spectrum\_d2, 467
- IXMisis\_raw\_file::IXFsize\_raw, 539
  - IXFsize\_raw\_i, 539
  - IXFsize\_raw\_i\_array, 539
- IXMisis\_raw\_file::IXTisis\_raw\_file, 630
  - found, 630
  - ndet, 630
  - nmon, 630
  - nper, 630
  - nspl, 630
  - ntc1, 630
  - nuse, 630
  - runid, 630
- IXMlattice, 160
  - IXFcheck\_lattice, 160
  - IXFcreate\_lattice, 160
  - IXFdestroy\_lattice, 160
  - IXFget\_lattice, 161
  - IXFoperation\_run\_lattice, 161
  - IXFset\_lattice, 161
- IXMlattice.f90
  - IXD\_DESCRIPTION, 796

- IXD\_SQTYPE, 796
- IXD\_TYPE, 796
- IXMlattice::IXTlattice, 632
  - a, 632
  - alpha, 633
  - b, 632
  - base, 632
  - beta, 633
  - c, 632
  - gamma, 633
  - space\_group, 633
- IXMlibcore, 162
  - IXCmemory\_stack\_size, 163
  - IXFlibrary\_finish, 162
  - IXFlibrary\_init, 162
- IXMmap, 164
  - IXFcheck\_map, 164
  - IXFcreate\_map, 164
  - IXFdestroy\_map, 165
  - IXFfileread\_map, 165
  - IXFget\_alloc\_map, 165
  - IXFget\_map, 165
  - IXFget\_ptr\_map, 166
  - IXFoperation\_run\_map, 166
  - IXFpopulate\_map\_dso, 166
  - IXFrawfile\_popdet\_map, 166
  - IXFrawfile\_popmon\_map, 167
  - IXFread\_dso\_map, 167
  - IXFread\_map, 167
  - IXFset\_map, 167
  - IXFverify\_period\_map, 168
  - IXFwkspec\_map, 168
- IXMmap.f90
  - IXD\_DESCRIPTION, 798
  - IXD\_SQTYPE, 798
  - IXD\_TYPE, 798
- IXMmap::IXTmap, 634
  - base, 634
  - spec\_ind, 634
  - spec\_no, 635
  - total\_spec, 634
  - work\_no, 634
- IXMmask, 169
  - IXFcheck\_mask, 169
  - IXFcreate\_mask, 169
  - IXFdestroy\_mask, 169
  - IXFfileread\_mask, 169
  - IXFget\_alloc\_mask, 170
  - IXFget\_mask, 170
  - IXFget\_ptr\_mask, 170
  - IXFoperation\_run\_mask, 171
  - IXFpopulate\_mask\_dso, 171
  - IXFread\_dso\_mask, 171
  - IXFread\_mask, 171
- IXFreadgen\_dso\_mask, 172
- IXFset\_mask, 172
- IXMmask.f90
  - IXD\_DESCRIPTION, 800
  - IXD\_SQTYPE, 800
  - IXD\_TYPE, 800
- IXMmask::IXTmask, 636
  - base, 636
  - mask\_array, 636
- IXMmaths\_basis, 173
  - IXFcos, 173
  - IXFcross, 173
  - IXFdot, 173
  - IXFnorm, 173
  - IXFrotmat\_orthogonal, 173
  - IXFrotmat\_to\_rotvec, 174
  - IXFrotvec\_to\_rotmat, 174
- IXMmaths\_basis::IXFcos, 422
- IXMmaths\_basis::IXFcross, 431
- IXMmaths\_basis::IXFdot, 447
- IXMmaths\_basis::IXFnorm, 489
- IXMmaths\_geometry, 175
  - IXFpolygon\_moments, 175
- IXMmaths\_projection, 176
  - IXCylindrical\_polar, 176
  - IXCplanar, 176
  - IXCpolar, 176
  - IXCspherical\_polar, 176
  - IXFproj\_projection, 176
- IXMmaths\_utils, 178
  - IXFunit\_matrix, 178
- IXMmemory, 179
  - associate\_integer4, 179
  - associate\_real8, 179
  - IXBallocArrayDescriptor, 180
  - IXBexternalMakeResult, 180
  - IXBgetArraydata, 180
  - IXCmemory\_buckets, 180
  - IXFmemory\_cleanup, 179
  - IXFmemory\_init, 179
- IXMmemory.f90
  - IXD\_DIMS, 867
  - IXD\_FTYPE, 867
  - IXD\_FTYPE\_FIXED, 867
  - IXD\_FTYPE\_TEMP, 867
  - IXD\_MTYPE, 867
  - IXD\_NAME, 867
  - IXD\_NDIMS, 867
  - IXD\_NULL, 867
  - IXD\_STACK, 867
- IXMmemory::IXTmemory\_info, 637
  - external\_ptr, 637
  - fortran\_alloc, 637
- IXMmoderator, 181

- IXFcheck\_moderator, 181
- IXFcreate\_moderator, 181
- IXFdestroy\_moderator, 182
- IXFget\_alloc\_moderator, 182
- IXFget\_moderator, 182
- IXFget\_ptr\_moderator, 182
- IXFoperation\_run\_moderator, 182
- IXFset\_moderator, 183
- IXMmoderator.f90
  - IXD\_DESCRIPTION, 802
  - IXD\_SQTYPE, 802
  - IXD\_TYPE, 802
- IXMmoderator::IXTmoderator, 638
  - angle, 639
  - base, 638
  - distance, 638
  - height, 639
  - name, 638
  - pulse\_model, 639
  - pulse\_pars, 639
  - temperature, 639
  - thickness, 639
  - width, 639
- IXMmoments, 184
  - IXFcheck\_moments, 184
  - IXFcreate\_moments, 184
  - IXFdestroy\_moments, 184
  - IXFget\_moments, 184
  - IXFoperation\_run\_moments, 185
  - IXFset\_moments, 185
- IXMmoments.f90
  - IXD\_DESCRIPTION, 803
  - IXD\_SQTYPE, 803
  - IXD\_TYPE, 803
- IXMmoments::IXTmoments, 640
  - area, 641
  - base, 641
  - bkgd\_slope, 641
  - bkgd\_xmean, 641
  - c\_fwhh, 641
  - fwhh, 641
  - g1, 641
  - g2, 641
  - sigma, 641
  - xmax, 641
  - xmean, 641
- IXMmoments\_utils, 186
  - get\_moments, 186
- IXMneutron\_constants, 187
  - c\_emev\_to\_ethz, 187
  - c\_emev\_to\_ewav, 187
  - c\_k\_to\_emev, 187
  - c\_t\_to\_d, 187
  - c\_t\_to\_emev, 187
  - c\_t\_to\_ethz, 188
  - c\_t\_to\_ewav, 188
  - c\_t\_to\_k, 188
  - c\_t\_to\_lam, 188
  - c\_t\_to\_q, 188
  - c\_t\_to\_sq, 188
  - c\_v\_to\_emev, 188
- IXMneutron\_units, 189
  - a\_0, 190
  - b\_0, 190
  - b\_1, 190
  - b\_2, 190
  - c\_0, 191
  - c\_1, 191
  - c\_2, 191
  - cap\_list, 191
  - character, 191
  - code\_list, 191
  - g\_0, 192
  - g\_1, 192
  - g\_2, 192
  - IXCcode\_e1, 192
  - IXCcode\_e2, 192
  - IXCcode\_k1, 192
  - IXCcode\_k2, 192
  - IXCcode\_lam1, 192
  - IXCcode\_lam2, 193
  - IXCcode\_q, 193
  - IXCcode\_qminus, 193
  - IXCcode\_qplus, 193
  - IXCcode\_t, 193
  - IXCcode\_tau, 193
  - IXCcode\_tau1, 193
  - IXCcode\_tau2, 193
  - IXCcode\_thz, 193
  - IXCcode\_v, 193
  - IXCcode\_v1, 193
  - IXCcode\_v2, 194
  - IXCcode\_w, 194
  - IXCcode\_wn, 194
  - IXCcountsC, 194
  - IXCcountsU, 194
  - IXCnullcode, 194
  - IXCnullunits, 194
  - IXCspecnoC, 194
  - IXCspecnoU, 194
  - IXCunit\_microsecond, 194
  - IXCworknoC, 194
  - IXCworknoU, 195
  - list\_len, 195
  - n\_0, 195
  - n\_1, 195
  - n\_2, 195
  - parameter, 195

- qopt\_1, 195
- qopt\_2, 195
- u\_0, 195
- u\_1, 196
- u\_2, 196
- IXMoperation, 197
  - \_, 207
  - A, 207
  - charform, 207
  - fieldnameformat, 207
  - i, 207
  - I5, 207
  - initialiseOperation, 198
  - intform, 208
  - IXFcheck\_array\_fileio, 198
  - IXFcheck\_fileio, 198
  - IXFdisplay\_array\_data\_source, 198
  - IXFdisplay\_array\_fileio, 199
  - IXFdisplay\_array\_history, 199
  - IXFdisplay\_data\_source, 199
  - IXFdisplay\_fileio, 199
  - IXFdisplay\_history, 199
  - IXFfile\_op, 200
  - IXFop\_filereadMake, 200
  - IXFop\_filewriteMake, 200
  - IXFop\_getMake, 200
  - IXFop\_initMake, 200
  - IXFop\_matlabreadMake, 200
  - IXFop\_matlabwriteMake, 200
  - IXFop\_setMake, 200
  - IXFoperation\_run\_array\_data\_source, 200
  - IXFoperation\_run\_array\_fileio, 201
  - IXFoperation\_run\_array\_history, 201
  - IXFoperation\_run\_data\_source, 201
  - IXFoperation\_run\_fileio, 201
  - IXFoperation\_run\_history, 202
  - IXFoperationArrayInit, 202
  - IXFoperationCleanup, 202
  - IXFoperationFinish, 203
  - IXFoperationStart, 203
  - makeArrayNameString, 203
  - makeOperationDisplay, 204
  - makeOperationFileRead, 204
  - makeOperationFileWrite, 204
  - makeOperationGet, 204
  - makeOperationInit, 205
  - makeOperationMatlabRead, 205
  - makeOperationMatlabWrite, 205
  - makeOperationSet, 205
  - nameform, 208
  - realform, 208
  - removeBlanks, 206
  - runOperationCharacter, 206
  - runOperationInteger, 206
  - runOperationLogical, 206
  - runOperationReal, 207
- IXMoperation.f90
  - IXD\_CHECK, 811
  - IXD\_DIMS, 811
  - IXD\_FORMAT, 811
  - IXD\_INITIALISE, 811
  - IXD\_NAME, 811
  - IXD\_NUMPRINT, 811
  - IXD\_PREFIX, 811
  - IXD\_QUALIFIER, 811
  - IXD\_TYPE, 811
  - IXD\_UNDEF, 811
- IXMoperation::IXFcheck, 417
  - IXFcheck\_array\_fileio, 417
  - IXFcheck\_fileio, 417
- IXMoperation::IXFdisplay, 433
  - IXFdisplay\_array\_data\_source, 433
  - IXFdisplay\_array\_fileio, 433
  - IXFdisplay\_array\_history, 433
  - IXFdisplay\_data\_source, 433
  - IXFdisplay\_fileio, 433
  - IXFdisplay\_history, 433
- IXMoperation::IXFoperation\_run, 491–493
- IXMoperation::IXFoperation\_run\_alloc, 494
  - runOperationAlloc1c, 494
  - runOperationAlloc1d, 494
  - runOperationAlloc1i, 494
  - runOperationAlloc2d, 494
  - runOperationAlloc2i, 494
  - runOperationAlloc3d, 494
  - runOperationAlloc3i, 494
  - runOperationAlloc4d, 494
  - runOperationAlloc4i, 494
- IXMoperation::IXFoperation\_run\_ptr, 495
  - runOperationPtr1d, 495
  - runOperationPtr1i, 495
  - runOperationPtr2d, 495
  - runOperationPtr2i, 495
  - runOperationPtr3d, 495
  - runOperationPtr3i, 495
  - runOperationPtr4d, 495
  - runOperationPtr4i, 495
- IXMoperation::IXFoperationMake, 496
- IXMoperation::IXFoperationMake
  - makeOperationDisplay, 496
  - makeOperationFileRead, 496
  - makeOperationFileWrite, 497
  - makeOperationGet, 496
  - makeOperationInit, 497
  - makeOperationMatlabRead, 496
  - makeOperationMatlabWrite, 496
  - makeOperationSet, 496

- IXMoperation::IXFoperationPrint, 498
- IXMoperation::IXFoperationPrint
  - runOperationPrint1c, 498
  - runOperationPrint1d, 498
  - runOperationPrint1i, 498
  - runOperationPrint2c, 498
  - runOperationPrint2d, 498
  - runOperationPrint2i, 498
  - runOperationPrint3c, 498
  - runOperationPrint3d, 498
  - runOperationPrint3i, 498
  - runOperationPrint4c, 498
  - runOperationPrint4d, 498
  - runOperationPrint4i, 498
- IXMoperation::IXTop\_display, 643
  - name, 643
- IXMoperation::IXTop\_fileread, 644
  - fo, 644
  - path, 644
- IXMoperation::IXTop\_filewrite, 645
  - fo, 645
  - path, 645
- IXMoperation::IXTop\_get, 646
  - field, 646
  - var, 646
- IXMoperation::IXTop\_init, 648
  - i, 648
- IXMoperation::IXTop\_matlabread, 649
  - prhs, 649
- IXMoperation::IXTop\_matlabwrite, 650
  - plhs, 650
  - prhs, 650
- IXMoperation::IXTop\_set, 651
  - field, 651
  - var, 651
- IXMoperation::IXToperation, 653
  - array\_index, 653
  - count, 653
  - display, 653
  - fileread, 654
  - filewrite, 654
  - get, 654
  - init, 654
  - level, 653
  - matlabread, 654
  - matlabwrite, 654
  - set, 654
- IXMoperation\_interfaces, 209
  - IXBcreateClassArray, 209
  - IXBgetNumberOfElements, 209
- IXMoperation\_interfaces.f90
  - IXD\_DIMS, 815
  - IXD\_NAME, 815
  - IXD\_TYPE, 815
- IXMoperation\_interfaces::IXBgetFromBinding, 390
- IXMoperation\_interfaces::IXBgetFromBindingAlloc, 391
- IXMoptions, 210
  - IXFcheck\_options, 210
  - IXFcreate\_options, 210
  - IXFdestroy\_options, 210
  - IXFget\_options, 210
  - IXFoperation\_run\_options, 211
  - IXFpresent, 211
  - IXFset\_options, 211
- IXMoptions.f90
  - IXD\_DESCRIPTION, 816
  - IXD\_SQTYPE, 816
  - IXD\_TYPE, 816
- IXMoptions::IXToptions, 655
  - base, 655
  - bgrd, 655
  - d\_rebin, 656
  - d\_units, 655
  - m\_rebin, 655
  - m\_units, 655
- IXMorientation, 212
  - IXFcheck\_orientation, 212
  - IXFcombine\_orientation, 212
  - IXFcreate\_class\_orientation, 213
  - IXFcreate\_orientation, 213
  - IXFdestroy\_orientation, 213
  - IXFdifference\_orientation, 213
  - IXFget\_attributes\_orientation, 214
  - IXFget\_class\_orientation, 214
  - IXFget\_orientation, 214
  - IXFget\_rotvec\_orientation, 214
  - IXFoperation\_run\_orientation, 215
  - IXFs2sprime\_orientation, 215
  - IXFset\_attributes\_orientation, 215
  - IXFset\_class\_orientation, 215
  - IXFset\_orientation, 215
  - IXFset\_rotvec\_orientation, 216
  - IXFsprime2s\_orientation, 216
  - IXFtimes\_op\_orientation, 216
- IXMorientation.f90
  - IXD\_DESCRIPTION, 818
  - IXD\_SQTYPE, 818
  - IXD\_TYPE, 818
- IXMorientation::IXFcreate, 429
  - IXFcreate\_class\_orientation, 429
- IXMorientation::IXFsetgen\_orientation, 529
  - IXFset\_rotvec\_orientation, 529
- IXMorientation::IXTorientation, 657
  - base, 657
  - rotmat, 657
- IXMorientation::operator, 712



- IXMpeaks, 218
  - IXFcheck\_peaks, 218
  - IXFcreate\_peaks, 218
  - IXFdestroy\_peaks, 218
  - IXFget\_alloc\_peaks, 219
  - IXFget\_peaks, 219
  - IXFget\_ptr\_peaks, 219
  - IXFoperation\_run\_peaks, 219
  - IXFset\_peaks, 220
- IXMpeaks.f90
  - IXD\_DESCRIPTION, 820
  - IXD\_SQTYPE, 820
  - IXD\_TYPE, 820
- IXMpeaks::IXTpeaks, 658
  - base, 659
  - integral, 659
  - integral\_units, 659
  - irange\_high, 659
  - irange\_low, 659
  - moments, 659
  - moments\_units, 659
  - monitor\_no, 659
- IXMphysical\_constants, 221
  - electron\_charge, 221
  - electron\_charge\_mantissa, 221
  - hbar, 221
  - hbar\_mantissa, 221
  - neutron\_mass, 221
  - neutron\_mass\_mantissa, 221
  - speed\_of\_light, 221
  - speed\_of\_light\_mantissa, 221
- IXMpointer\_to\_array, 223
- IXMpointer\_to\_array::IXTpointer\_to\_array, 660
  - x, 660
- IXMrebin, 224
  - IXFrebin\_1d\_hist, 224
  - IXFrebin\_1d\_hist\_get\_arr, 224
  - IXFrebin\_points, 224
  - IXFrebinX\_2d\_hist, 225
  - IXFrebinY\_2d\_hist, 225
- IXMrebunch, 226
  - IXFrebunch\_hist, 226
  - IXFrebunch\_histX\_2d, 226
  - IXFrebunch\_histY\_2d, 227
  - IXFrebunch\_points, 227
  - IXFrebunch\_pointsX, 227
  - IXFrebunch\_pointsY, 227
  - IXFrebunchHist, 227
  - IXFrebunchHistX, 228
  - IXFrebunchHistY, 228
  - IXFrebunchPoints, 228
  - IXFrebunchPointsX, 229
  - IXFrebunchPointsY, 229
- IXFrebunchXY, 229
- IXMregroup, 231
  - IXFregroup\_1d\_hist, 231
  - IXFregroupX\_2d\_hist, 231
  - IXFregroupY\_2d\_hist, 231
- IXMrunfile, 233
  - IXCcomline\_initlength, 245
  - IXFbackground\_runfile, 234
  - IXFcharge\_norm\_runfile, 234
  - IXFcheck\_runfile, 234
  - IXFcompare\_runfile, 234
  - IXFcreate\_runfile, 234
  - IXFdestroy\_runfile, 235
  - IXFeffic\_norm\_runfile, 235
  - IXFget\_runfile, 235
  - IXFgetdetdata\_runfile, 236
  - IXFgetei\_runfile, 236
  - IXFgeteival\_runfile, 236
  - IXFgetmonddata\_runfile, 236
  - IXFmon\_norm\_runfile, 237
  - IXFoperation\_run\_runfile, 237
  - IXFpeak\_norm\_runfile, 237
  - IXFpopulate\_det\_runfile, 237
  - IXFpopulate\_mon\_runfile, 238
  - IXFpopulate\_runfile, 239
  - IXFrebin\_runfile, 240
  - IXFremap\_runfile, 240
  - IXFset\_runfile, 241
  - IXFsolid\_runfile, 241
  - IXFwhitecompare\_runfile, 242
  - loaddetmap, 242
  - loadheaderinfo\_isis, 242
  - loadmask, 243
  - loadmonmap, 243
  - loadrawfile, 243
  - units\_rebinXdesc\_runfile, 244
  - units\_rebinXref\_runfile, 244
  - units\_runfile, 244
- IXMrunfile.f90
  - IXD\_DESCRIPTION, 822
  - IXD\_SQTYPE, 822
  - IXD\_TYPE, 822
- IXMrunfile::IXFunits\_runfile, 569
  - units\_rebinXdesc\_runfile, 569
  - units\_rebinXref\_runfile, 569
  - units\_runfile, 569
- IXMrunfile::IXTrunfile, 661
  - base, 662
  - command\_line, 662
  - det\_data, 663
  - end\_time, 662
  - inst, 663
  - mon\_data, 663
  - peaks, 663

- program\_name, 662
- run\_number, 662
- sample, 663
- start\_time, 662
- title, 662
- total\_charge, 662
- total\_good\_frames, 662
- total\_raw\_frames, 662
- users, 663
- IXMsample, 246
  - IXFcheck\_sample, 246
  - IXFcreate\_sample, 246
  - IXFdestroy\_sample, 247
  - IXFget\_sample, 247
  - IXFoperation\_run\_sample, 248
  - IXFset\_sample, 248
- IXMsample.f90
  - IXD\_DESCRIPTION, 824
  - IXD\_SQTYPE, 824
  - IXD\_TYPE, 824
- IXMsample::IXTsample, 664
  - base, 665
  - chemical\_formula, 665
  - dimensions, 667
  - electric\_coord, 665
  - electric\_field, 665
  - gonio, 666
  - height, 667
  - inner\_radius, 667
  - lattice, 666
  - magnetic\_coord, 666
  - magnetic\_field, 665
  - mass, 667
  - molecular\_weight, 667
  - name, 665
  - omega, 666
  - position, 667
  - pressure, 666
  - psi, 666
  - radius, 667
  - shape, 666
  - temperature, 665
  - uvec, 666
  - vvec, 666
  - x\_geom, 666
  - xabs, 667
  - xcoh, 667
  - xinc, 667
  - y\_geom, 666
- IXMshape, 250
  - IXCbox, 259
  - IXCylinder, 259
  - IXCholcyl, 259
  - IXCpoint, 259
  - IXCpolygon, 260
  - IXCsphere, 260
  - IXFarea\_vertices\_box, 251
  - IXFarea\_vertices\_cylinder, 251
  - IXFarea\_vertices\_holcyl, 251
  - IXFarea\_vertices\_point, 251
  - IXFarea\_vertices\_polygon, 251
  - IXFarea\_vertices\_shape, 252
  - IXFarea\_vertices\_sphere, 252
  - IXFcheck\_box, 252
  - IXFcheck\_cylinder, 252
  - IXFcheck\_holcyl, 253
  - IXFcheck\_point, 253
  - IXFcheck\_polygon, 253
  - IXFcheck\_shape, 253
  - IXFcheck\_sphere, 254
  - IXFcreate\_shape, 254
  - IXFdestroy\_shape, 254
  - IXFget\_alloc\_shape, 254
  - IXFget\_ptr\_shape, 254
  - IXFget\_shape, 255
  - IXFoperation\_run\_shape, 255
  - IXFprojarea\_vertices\_shape, 255
  - IXFset\_shape, 256
  - IXFsolid\_angle\_box, 256
  - IXFsolid\_angle\_cylinder, 256
  - IXFsolid\_angle\_holcyl, 256
  - IXFsolid\_angle\_point, 257
  - IXFsolid\_angle\_polygon, 257
  - IXFsolid\_angle\_shape, 257
  - IXFsolid\_angle\_sphere, 257
  - IXFvolume\_box, 258
  - IXFvolume\_cylinder, 258
  - IXFvolume\_holcyl, 258
  - IXFvolume\_point, 258
  - IXFvolume\_polygon, 258
  - IXFvolume\_shape, 259
  - IXFvolume\_sphere, 259
- IXMshape.f90
  - IXD\_DESCRIPTION, 826
  - IXD\_NO\_BASE, 826
  - IXD\_SQTYPE, 826
  - IXD\_TYPE, 826
- IXMshape::IXFsolid\_angle, 540
- IXMshape::IXFvolume, 579
- IXMshape::IXTshape, 668
  - dimensions, 668
  - type, 668
- IXMshift, 261
  - IXFshift, 261
- IXMsort, 262
- IXMsource, 263
  - IXFcheck\_source, 263
  - IXFcreate\_source, 263

- IXFdestroy\_source, 263
- IXFget\_source, 263
- IXFoperation\_run\_source, 264
- IXFset\_source, 264
- IXMsource.f90
  - IXD\_DESCRIPTION, 827
  - IXD\_SQTYPE, 827
  - IXD\_TYPE, 827
- IXMsource::IXTsource, 669
  - base, 669
  - facility\_name, 669
  - frequency, 669
- IXMspectra, 265
  - IXFcheck\_spectra, 265
  - IXFcompare\_spectra, 265
  - IXFcreate\_spectra, 265
  - IXFdestroy\_spectra, 266
  - IXFget\_alloc\_spectra, 266
  - IXFget\_ptr\_spectra, 266
  - IXFget\_spectra, 266
  - IXFgetdets\_spectra, 267
  - IXFoperation\_run\_spectra, 267
  - IXFset\_spectra, 267
  - IXFwhitecompare\_spectra, 267
  - populate\_list\_dso\_isis, 268
- IXMspectra.f90
  - IXD\_DESCRIPTION, 829
  - IXD\_SQTYPE, 829
  - IXD\_TYPE, 829
- IXMspectra::IXFpopulate\_spectra, 515
  - populate\_list\_dso\_isis, 515
- IXMspectra::IXTspectra, 670
  - base, 670
  - det\_index, 671
  - det\_no, 671
  - ndet, 670
  - spec\_lookup, 670
  - spec\_no, 670
- IXMstatus, 269
  - add\_global\_status, 269
  - add\_local\_status, 269
  - add\_source\_status, 270
  - check\_error\_status, 270
  - check\_global\_status, 270
  - check\_local\_status, 270
  - check\_warning\_status, 270
  - clear\_global\_status, 270
  - clear\_local\_status, 271
  - equal\_status, 271
  - IXCseverity\_debug, 272
  - IXCseverity\_error, 272
  - IXCseverity\_fatal, 273
  - IXCseverity\_info, 273
  - IXCseverity\_names, 273
  - IXCseverity\_ok, 273
  - IXCseverity\_warning, 273
  - IXFinit\_status, 271
  - IXGstatus, 273
  - make\_message\_status, 271
  - make\_traceback\_status, 271
  - notequal\_status, 271
  - remove\_source\_status, 271
  - report\_global\_status, 272
  - report\_local\_status, 272
- IXMstatus::interface, 381, 382
- IXMstatus::IXFadd\_status, 392
  - add\_global\_status, 392
  - add\_local\_status, 392
- IXMstatus::IXFcheck\_status, 418
  - check\_global\_status, 418
  - check\_local\_status, 418
- IXMstatus::IXFclear\_status, 419
  - clear\_global\_status, 419
  - clear\_local\_status, 419
- IXMstatus::IXFreport\_status, 526
  - report\_global\_status, 526
  - report\_local\_status, 526
- IXMstatus::IXTstatus, 672
  - err\_list, 672
  - err\_size, 672
  - err\_top, 672
  - severity, 672
  - source\_list, 673
  - source\_size, 673
  - source\_top, 673
- IXMstatus::IXTstatus\_condition, 674
  - code, 674
  - facility, 674
  - message, 674
  - severity, 674
  - source, 674
- IXMsw\_bridge, 274
  - IXFcheck\_sw\_bridge, 274
  - IXFcreate\_sw\_bridge, 274
  - IXFdestroy\_sw\_bridge, 275
  - IXFget\_alloc\_sw\_bridge, 275
  - IXFget\_ptr\_sw\_bridge, 275
  - IXFget\_sw\_bridge, 275
  - IXFoperation\_run\_sw\_bridge, 275
  - IXFpopulate\_sw\_bridge, 276
  - IXFset\_sw\_bridge, 276
- IXMsw\_bridge.f90
  - IXD\_DESCRIPTION, 831
  - IXD\_SQTYPE, 831
  - IXD\_TYPE, 831
- IXMsw\_bridge::IXTsw\_bridge, 675
  - base, 675
  - spec\_no, 675

- total\_work, 675
- work\_ind, 675
- work\_no, 676
- IXMtestclass, 277
  - IXFCheck\_Testclass, 277
  - IXFcreate\_special\_testclass, 277
  - IXFCreate\_testclass, 277
  - IXFdestroy\_testclass, 278
  - IXFget\_alloc\_testclass, 278
  - IXFget\_ptr\_testclass, 278
  - IXFget\_testclass, 278
  - IXFoperation\_run\_testclass, 279
  - IXFPlus\_testclass, 279
  - IXFset\_testclass, 279
  - IXFtestfunc\_testclass, 280
- IXMtestclass.f90
  - IXD\_DESCRIPTION, 833
  - IXD\_SQTYPE, 833
  - IXD\_TYPE, 833
- IXMtestclass::IXFcreate, 430
  - IXFcreate\_special\_testclass, 430
- IXMtestclass::IXTtestclass, 677
  - base, 678
  - d2d, 678
  - err\_array, 678
  - int\_arr, 678
  - label, 678
  - nx, 678
  - spectra, 678
  - val, 678
  - val\_array, 678
  - val\_stat, 678
  - xhist, 678
- IXMtools, 281
  - cspace, 282
  - ctod, 282
  - ctoi, 282
  - ctoi2, 282
  - ctor, 283
  - ctoxd, 283
  - ctoxi, 283
  - ctoxi2, 283
  - ctoxr, 284
  - eof, 289
  - err, 289
  - getd, 284
  - getds, 284
  - geti, 284
  - getis, 285
  - getlf, 285
  - getlin, 285
  - getr, 285
  - getrs, 286
  - homer\_message, 286
  - idelim, 286
  - inext, 287
  - inxtch, 287
  - iprvch, 287
  - lenstr, 287
  - locase, 287
  - new, 289
  - numeric\_list\_terminator, 289
  - ok, 289
  - old, 289
  - oldnew, 289
  - prompt, 287
  - read, 289
  - read\_line, 287
  - readwr, 289
  - remark, 288
  - shutfl, 288
  - stdin, 289
  - stdout, 289
  - trail\_space, 289
  - unitno, 288
  - upcase, 288
  - warn, 290
- IXMtranslation, 291
  - IXFcheck\_translation, 291
  - IXFcreate\_translation, 291
  - IXFcross\_translation, 292
  - IXFdestroy\_translation, 292
  - IXFdot\_translation, 292
  - IXFget\_translation, 292
  - IXFmatmul\_translation, 292
  - IXFnorm\_translation, 292
  - IXFoperation\_run\_translation, 293
  - IXFs2sprime\_translation, 293
  - IXFset\_translation, 293
  - IXFsprime2s\_translation, 293
  - IXFtt\_minus\_op\_translation, 293
  - IXFtt\_plus\_op\_translation, 293
  - IXFtv\_minus\_op\_translation, 294
  - IXFtv\_plus\_op\_translation, 294
  - IXFvt\_minus\_op\_translation, 294
  - IXFvt\_plus\_op\_translation, 294
- IXMtranslation.f90
  - IXD\_DESCRIPTION, 835
  - IXD\_SQTYPE, 835
  - IXD\_TYPE, 835
- IXMtranslation::IXFcross, 432
- IXMtranslation::IXFdot, 448
- IXMtranslation::IXFnorm, 490
- IXMtranslation::IXTtranslation, 680
  - base, 680
  - vector, 680
- IXMtranslation::operator, 710, 711
- IXMtype\_definitions, 295

- d0, 296
- deg\_to\_rad\_dp, 296
- deg\_to\_rad\_sp, 296
- dp, 296
- dpc, 296
- epsilon\_dp, 296
- epsilon\_sp, 296
- euler\_dp, 296
- euler\_sp, 296
- fourpi\_dp, 297
- fourpi\_sp, 297
- i1b, 297
- i2b, 297
- i4b, 297
- IXCundef\_char, 297
- IXCundef\_dp, 297
- IXCundef\_i4b, 297
- IXCundef\_logical, 297
- IXCundef\_sp, 298
- lgt, 298
- long\_len, 298
- name\_len, 298
- null\_dp, 298
- null\_sp, 298
- pi\_dp, 298
- pi\_sp, 298
- pio2\_dp, 298
- pio2\_sp, 299
- rad\_to\_deg\_dp, 299
- rad\_to\_deg\_sp, 299
- short\_len, 299
- sp, 299
- spc, 299
- sqrt2\_dp, 299
- sqrt2\_sp, 299
- twopi\_dp, 299
- twopi\_sp, 299
- IXMunits, 301
  - IXFcheck\_units, 301
  - IXFcompare\_units, 301
  - IXFcreate\_code\_units, 301
  - IXFcreate\_full\_units, 301
  - IXFcreate\_units, 302
  - IXFdestroy\_units, 302
  - IXFget\_units, 302
  - IXFmake\_label\_units, 302
  - IXFoperation\_run\_units, 303
  - IXFset\_units, 303
- IXMunits.f90
  - IXD\_DESCRIPTION, 836
  - IXD\_SQTYPE, 836
  - IXD\_TYPE, 836
- IXMunits::IXTunits, 681
  - base, 681
  - code, 681
  - units, 681
- IXMunits\_utils, 304
  - eof, 306
  - err, 306
  - IXFunits\_convert, 304
  - IXFunits\_get\_len\_arr, 304
  - ok, 307
  - units\_check\_codes, 305
  - units\_check\_parameters, 305
  - units\_coefficients, 305
  - units\_composite\_coefficients, 306
  - units\_xconvert, 306
  - warn, 307
- IXMunspike, 308
  - IXFunspike\_1d, 308
- IXMuser, 309
  - IXFcheck\_user, 309
  - IXFcreate\_user, 309
  - IXFdestroy\_user, 309
  - IXFget\_user, 310
  - IXFoperation\_run\_user, 310
  - IXFset\_user, 310
- IXMuser.f90
  - IXD\_DESCRIPTION, 837
  - IXD\_SQTYPE, 837
  - IXD\_TYPE, 837
- IXMuser::IXTuser, 682
  - address, 682
  - affiliation, 682
  - base, 682
  - email, 683
  - fax, 683
  - name, 682
  - telephone, 683
- IXMworkspace, 311
  - IXFcheck\_workspace, 311
  - IXFcreate\_workspace, 311
  - IXFdestroy\_workspace, 311
  - IXFget\_alloc\_workspace, 312
  - IXFget\_ptr\_workspace, 312
  - IXFget\_workspace, 312
  - IXFoperation\_run\_workspace, 312
  - IXFpopulate\_workspace, 313
  - IXFset\_workspace, 313
- IXMworkspace.f90
  - IXD\_DESCRIPTION, 839
  - IXD\_SQTYPE, 839
  - IXD\_TYPE, 839
- IXMworkspace::IXTworkspace, 684
  - base, 685
  - eff\_det, 685
  - effdet\_index, 685
  - work\_no, 685

- IXMwrapped\_var, 314
  - f\_wrap\_char, 315
  - f\_wrap\_dp, 315
  - f\_wrap\_i, 315
  - f\_wrap\_logval, 315
  - f\_wrap\_object, 315
- IXCvartype\_char, 317
- IXCvartype\_char1, 317
- IXCvartype\_dp, 317
- IXCvartype\_dp1, 317
- IXCvartype\_dp2, 317
- IXCvartype\_dp3, 317
- IXCvartype\_dp4, 317
- IXCvartype\_i, 317
- IXCvartype\_i1, 317
- IXCvartype\_i2, 318
- IXCvartype\_i3, 318
- IXCvartype\_i4, 318
- IXCvartype\_logical, 318
- IXCvartype\_object, 318
- IXCvartype\_unknown, 318
- IXFwrap\_type, 315
- unwrap\_char, 315
- unwrap\_dp, 315
- unwrap\_i, 316
- unwrap\_logval, 316
- unwrap\_object, 316
- wrap\_char, 316
- wrap\_dp, 316
- wrap\_i, 316
- wrap\_logval, 316
- wrap\_object, 316
- IXMwrapped\_var::base\_object, 377
  - d, 377
- IXMwrapped\_var::IXFunwrap\_var, 572
  - unwrap\_char, 573
  - unwrap\_char1, 573
  - unwrap\_dp, 572
  - unwrap\_dp1, 572
  - unwrap\_dp2, 573
  - unwrap\_dp3, 573
  - unwrap\_dp4, 573
  - unwrap\_i, 572
  - unwrap\_i1, 572
  - unwrap\_i2, 572
  - unwrap\_i3, 572
  - unwrap\_i4, 572
  - unwrap\_logval, 573
  - unwrap\_object, 573
- IXMwrapped\_var::IXFunwrap\_varAlloc, 574
- IXMwrapped\_var::IXFunwrap\_varAlloc
  - unwrap\_alloc\_char1, 574
  - unwrap\_alloc\_dp1, 574
  - unwrap\_alloc\_dp2, 574
  - unwrap\_alloc\_dp3, 574
  - unwrap\_alloc\_dp4, 574
  - unwrap\_ptr\_char1, 575
  - unwrap\_ptr\_dp1, 575
  - unwrap\_ptr\_dp2, 575
  - unwrap\_ptr\_dp3, 575
  - unwrap\_ptr\_dp4, 575
  - unwrap\_ptr\_i1, 575
  - unwrap\_ptr\_i2, 575
  - unwrap\_ptr\_i3, 575
  - unwrap\_ptr\_i4, 575
- IXMwrapped\_var::IXFunwrap\_varPtr, 575
- IXMwrapped\_var::IXFunwrap\_varPtr
  - unwrap\_ptr\_char1, 575
  - unwrap\_ptr\_dp1, 575
  - unwrap\_ptr\_dp2, 575
  - unwrap\_ptr\_dp3, 575
  - unwrap\_ptr\_dp4, 575
  - unwrap\_ptr\_i1, 575
  - unwrap\_ptr\_i2, 575
  - unwrap\_ptr\_i3, 575
  - unwrap\_ptr\_i4, 575
- IXMwrapped\_var::IXFwrap, 581
  - f\_wrap\_char1, 581
  - f\_wrap\_dp1, 581
  - f\_wrap\_dp2, 581
  - f\_wrap\_dp3, 581
  - f\_wrap\_dp4, 581
  - f\_wrap\_i1, 581
  - f\_wrap\_i2, 581
  - f\_wrap\_i3, 581
  - f\_wrap\_i4, 581
- IXMwrapped\_var::IXFwrap\_var, 582
  - wrap\_char, 583
  - wrap\_char1, 583
  - wrap\_dp, 582
  - wrap\_dp1, 582
  - wrap\_dp2, 583
  - wrap\_dp3, 583
  - wrap\_dp4, 583
  - wrap\_i, 582
  - wrap\_i1, 582
  - wrap\_i2, 582
  - wrap\_i3, 582
  - wrap\_i4, 582
  - wrap\_logval, 583
  - wrap\_object, 583
- IXMwrapped\_var::IXTwrapped\_object, 686
  - ptr, 686
- IXMwrapped\_var::IXTwrapped\_var, 687
  - char, 689
  - char1, 689
  - dp, 688
  - dp1, 688
  - dp2, 688
  - dp3, 688
  - dp4, 688
  - i, 688
  - i1, 688

- i2, 688
- i3, 688
- i4, 689
- logval, 689
- object, 688
- vartype, 688
- IXMwrappedvar.f90
  - IXD\_DIMS, 842
  - IXD\_NAME, 842
  - IXD\_TYPE, 842
- IXMws\_bridge, 319
  - IXFcheck\_subsid\_ws\_bridge, 319
  - IXFcheck\_ws\_bridge, 319
  - IXFcompare\_ws\_bridge, 319
  - IXFcreate\_ws\_bridge, 320
  - IXFdestroy\_ws\_bridge, 320
  - IXFget\_alloc\_ws\_bridge, 320
  - IXFget\_ptr\_ws\_bridge, 320
  - IXFget\_ws\_bridge, 321
  - IXFgetspecsgood\_ws\_bridge, 321
  - IXFgetspecstotal\_ws\_bridge, 321
  - IXFoperation\_run\_ws\_bridge, 321
  - IXFset\_ws\_bridge, 321
- IXMws\_bridge.f90
  - IXD\_DESCRIPTION, 844
  - IXD\_SQTYPE, 844
  - IXD\_TYPE, 844
- IXMws\_bridge::IXTws\_bridge, 690
  - bad\_spectra\_flag, 691
  - base, 690
  - spec\_ind, 690
  - spec\_no, 691
  - total\_spec, 690
  - work\_no, 690
- kdp
  - m\_mrgnrnk, 323
  - m\_refsr, 325
  - m\_unirnk, 327
- L2
  - IXMdetector::IXTdetector, 613
- label
  - IXMtestclass::IXTtestclass, 678
- lattice
  - IXMsample::IXTsample, 666
- lenstr
  - IXMtools, 287
- level
  - IXMoperation::IXToperation, 653
- lgt
  - IXMtype\_definitions, 298
- libclasses/ endian\_convert.c, 723
- libclasses/ endian\_convert.h, 727
- libclasses/ IXMaperture.f90, 730
- libclasses/ IXMattenuator.f90, 731
- libclasses/ IXMbase.f90, 732
- libclasses/ IXMbridge.f90, 734
- libclasses/ IXMchopper\_instrument.f90, 736
- libclasses/ IXMcrystalanalyser.f90, 738
- libclasses/ IXMdata.f90, 739
- libclasses/ IXMdata\_source.f90, 741
- libclasses/ IXMdataset\_1d.f90, 742
- libclasses/ IXMdataset\_2d.f90, 746
- libclasses/ IXMdataset\_3d.f90, 752
- libclasses/ IXMdataset\_4d.f90, 753
- libclasses/ IXMdataset\_common.f90, 754
- libclasses/ IXMdataset\_nd.f90, 755
- libclasses/ IXMdatum.f90, 756
- libclasses/ IXMdatum\_array.f90, 758
- libclasses/ IXMdet\_he3.f90, 762
- libclasses/ IXMdet\_solid.f90, 763
- libclasses/ IXMdetector.f90, 764
- libclasses/ IXMdiffracton\_instrument.f90, 766
- libclasses/ IXMeffdet\_index.f90, 768
- libclasses/ IXMfermi\_chopper.f90, 770
- libclasses/ IXMfileio.f90, 772
- libclasses/ IXMgeometry.f90, 775
- libclasses/ IXMgroup.f90, 777
- libclasses/ IXMgroups.f90, 779
- libclasses/ IXMhistory.f90, 781
- libclasses/ IXMinput\_source.f90, 782
- libclasses/ IXMinstrument.f90, 784
- libclasses/ IXMisis\_raw\_file.f90, 786
- libclasses/ IXMlattice.f90, 796
- libclasses/ IXMmap.f90, 797
- libclasses/ IXMmask.f90, 799
- libclasses/ IXMmoderator.f90, 801
- libclasses/ IXMmoments.f90, 803
- libclasses/ IXMoperation.f90, 804
- libclasses/ IXMoperation\_interfaces.f90, 812
- libclasses/ IXMoptions.f90, 816
- libclasses/ IXMorientation.f90, 817
- libclasses/ IXMpeaks.f90, 819
- libclasses/ IXMrunfile.f90, 821
- libclasses/ IXMsample.f90, 823
- libclasses/ IXMshape.f90, 825
- libclasses/ IXMsource.f90, 827
- libclasses/ IXMspectra.f90, 828
- libclasses/ IXMsw\_bridge.f90, 830
- libclasses/ IXMtestclass.f90, 832
- libclasses/ IXMtranslation.f90, 834
- libclasses/ IXMunits.f90, 836
- libclasses/ IXMuser.f90, 837
- libclasses/ IXMworkspace.f90, 838
- libclasses/ IXMwrappedvar.f90, 840
- libclasses/ IXMws\_bridge.f90, 843
- libclasses/ NXmodule.f90, 845

- libclasses/NXUmodule.f90, 848
- libcore.c
  - c\_associate\_array\_c1, 886
  - c\_associate\_array\_dp1, 886
  - c\_associate\_array\_dp2, 886
  - c\_associate\_array\_dp3, 886
  - c\_associate\_array\_dp4, 886
  - c\_associate\_array\_i1, 886
  - c\_associate\_array\_i2, 887
  - c\_associate\_array\_i3, 887
  - c\_associate\_array\_i4, 887
  - c\_associate\_integer4, 887
  - c\_associate\_integer4\_\_, 887
  - c\_associate\_real8, 887
  - c\_associate\_real8\_\_, 887
  - c\_hashmemory, 887
  - c\_hashmemory\_\_, 887
  - CALL\_MODE, 887
- libcore/IXMarraymanips.f90, 851
- libcore/IXMderivative.f90, 853
- libcore/IXMefficiency.f90, 854
- libcore/IXMerrorcodes.f90, 855
- libcore/IXMindex.f90, 856
- libcore/IXMintegrate.f90, 857
- libcore/IXMio.f90, 858
- libcore/IXMlibcore.f90, 859
- libcore/IXMmaths\_basis.f90, 860
- libcore/IXMmaths\_geometry.f90, 861
- libcore/IXMmaths\_projection.f90, 862
- libcore/IXMmaths\_utils.f90, 863
- libcore/IXMmemory.f90, 864
- libcore/IXMmoments\_utils.f90, 868
- libcore/IXMneutron\_constants.f90, 869
- libcore/IXMneutron\_units.f90, 870
- libcore/IXMphysical\_constants.f90, 872
- libcore/IXMpointer\_to\_array.f90, 873
- libcore/IXMrebin.f90, 874
- libcore/IXMrebunch.f90, 875
- libcore/IXMregroup.f90, 876
- libcore/IXMshift.f90, 877
- libcore/IXMsort.f90, 878
- libcore/IXMstatus.f90, 879
- libcore/IXMtools.f90, 880
- libcore/IXMtype\_definitions.f90, 882
- libcore/IXMunits\_utils.f90, 884
- libcore/IXMunspike.f90, 885
- libcore/libcore.c, 886
- libcore/memory\_utils.f90, 888
- list
  - IXMgroups::IXTgroups, 624
- list\_len
  - IXMneutron\_units, 195
- loaddetmap
  - IXMrunfile, 242
- loadheaderinfo\_isis
  - IXMrunfile, 242
- loadmask
  - IXMrunfile, 243
- loadmonmap
  - IXMrunfile, 243
- loaddrawfile
  - IXMrunfile, 243
- local\_to\_ieee\_double
  - endian\_convert.c, 725
  - endian\_convert.h, 727
- local\_to\_ieee\_float
  - endian\_convert.c, 725
  - endian\_convert.h, 728
- local\_to\_vax\_int
  - endian\_convert.c, 725
  - endian\_convert.h, 728
- local\_to\_vax\_ints
  - endian\_convert.c, 725
  - endian\_convert.h, 728
- local\_to\_vax\_short
  - endian\_convert.c, 725
  - endian\_convert.h, 728
- local\_to\_vax\_shorts
  - endian\_convert.c, 725
  - endian\_convert.h, 728
- local\_to\_vaxf
  - endian\_convert.c, 726
  - endian\_convert.h, 728
- locase
  - IXMtools, 287
- logval
  - IXMwrapped\_var::IXTwrapped\_var, 689
- long\_len
  - IXMtype\_definitions, 298
- lower\_index\_dp
  - IXMindex, 139
- lower\_index\_i4b
  - IXMindex, 139
- lower\_index\_sp
  - IXMindex, 139
- m\_mrgrnk, 323
  - D\_valmed, 323
  - I\_valmed, 323
  - kdp, 323
  - R\_valmed, 323
- m\_mrgrnk::IXFrank, 524
  - D\_mrgrnk, 524
  - d\_valmed, 524
  - I\_mrgrnk, 524
  - i\_valmed, 524
  - R\_mrgrnk, 524
  - r\_valmed, 524



- m\_rebin
  - IXMoptions::IXToptions, 655
- m\_refsor, 324
  - D\_inssor, 324
  - D\_refsor, 324
  - D\_subsor, 324
  - I\_inssor, 324
  - I\_refsor, 324
  - I\_subsor, 324
  - kdp, 325
  - R\_inssor, 325
  - R\_refsor, 325
  - R\_subsor, 325
- m\_refsor::IXFsort, 542
  - d\_refsor, 542
  - i\_refsor, 542
  - r\_refsor, 542
- m\_unirnk, 326
  - D\_nearless, 326
  - D\_unirnk, 326
  - I\_nearless, 326
  - I\_unirnk, 326
  - kdp, 327
  - R\_nearless, 326
  - R\_unirnk, 326
- m\_unirnk::IXFunique\_rank, 565
  - I\_nearless, 565
  - R\_nearless, 565
- m\_units
  - IXMoptions::IXToptions, 655
- m\_valmed, 328
- macro\_xs
  - IXMdet\_solid::IXTdet\_solid, 611
- magnetic\_coord
  - IXMsample::IXTsample, 666
- magnetic\_field
  - IXMsample::IXTsample, 665
- make\_message\_status
  - IXMstatus, 271
- make\_traceback\_status
  - IXMstatus, 271
- makeArrayNameString
  - IXMoperation, 203
- makeOperationDisplay
  - IXMoperation, 204
  - IXMoperation::IXFoperationMake, 496
- makeOperationFileRead
  - IXMoperation, 204
  - IXMoperation::IXFoperationMake, 496
- makeOperationFileWrite
  - IXMoperation, 204
  - IXMoperation::IXFoperationMake, 497
- makeOperationGet
  - IXMoperation, 204
  - IXMoperation::IXFoperationMake, 496
- makeOperationInit
  - IXMoperation, 205
  - IXMoperation::IXFoperationMake, 497
- makeOperationMatlabRead
  - IXMoperation, 205
  - IXMoperation::IXFoperationMake, 496
- makeOperationMatlabWrite
  - IXMoperation, 205
  - IXMoperation::IXFoperationMake, 496
- makeOperationSet
  - IXMoperation, 205
  - IXMoperation::IXFoperationMake, 496
- mantissa
  - ieee\_single, 380
- mantissa1
  - ieee\_double, 379
  - vax\_double, 713
  - vax\_single, 714
- mantissa2
  - ieee\_double, 379
  - vax\_double, 713
  - vax\_single, 714
- mantissa3
  - vax\_double, 713
- mantissa4
  - vax\_double, 713
- MASK
  - endian\_convert.c, 724
- mask\_array
  - IXMmask::IXTmask, 636
- mass
  - IXMsample::IXTsample, 667
- material
  - IXMattenuator::IXTattenuator, 587
- matlabread
  - IXMoperation::IXToperation, 654
- matlabwrite
  - IXMoperation::IXToperation, 654
- maybe\_flip\_bytes
  - endian\_convert.c, 724
- member\_byid
  - IXMgroups, 132
  - IXMgroups::IXFis\_member\_groups, 470
- member\_byname
  - IXMgroups, 133
  - IXMgroups::IXFis\_member\_groups, 470
- member\_list\_byid
  - IXMgroups, 133
  - IXMgroups::IXFmember\_list\_groups, 476
- member\_list\_byname
  - IXMgroups, 133
  - IXMgroups::IXFmember\_list\_groups, 476
- memory\_utils.f90

- associate\_x\_array\_c1, 888
- associate\_x\_array\_dp1, 888
- associate\_x\_array\_dp2, 888
- associate\_x\_array\_dp3, 888
- associate\_x\_array\_dp4, 888
- associate\_x\_array\_i1, 888
- associate\_x\_array\_i2, 888
- associate\_x\_array\_i3, 889
- associate\_x\_array\_i4, 889
- message
  - IXMstatus::IXTstatus\_condition, 674
- mmax
  - endian\_convert.c, 724
- mmin
  - endian\_convert.c, 724
- mode
  - IXMfileio::IXTfileio, 620
- moderator
  - IXMInstrument::IXTinstrument, 629
- molecular\_weight
  - IXMsample::IXTsample, 667
- moments
  - IXMpeaks::IXTpeaks, 659
- moments\_units
  - IXMpeaks::IXTpeaks, 659
- mon\_data
  - IXMrunfile::IXTrunfile, 663
- monitor\_no
  - IXMpeaks::IXTpeaks, 659
- monochromator
  - IXMchopper\_instrument::IXTchopper\_instrument, 590
- n
  - IXMgroups::IXTgroups, 624
  - IXMinput\_source::IXTinput\_source, 626
- n\_0
  - IXMneutron\_units, 195
- n\_1
  - IXMneutron\_units, 195
- n\_2
  - IXMneutron\_units, 195
- name
  - IXMaperture::IXTaperature, 584
  - IXMattenuator::IXTattenuator, 586
  - IXMcrystalanalyser::IXTcrystalanalyser, 591
  - IXMfermi\_chopper::IXTfermi\_chopper, 617
  - IXMgroup::IXTgroup, 622
  - IXMInstrument::IXTinstrument, 628
  - IXMmoderator::IXTmoderator, 638
  - IXMoperation::IXTop\_display, 643
  - IXMsample::IXTsample, 665
  - IXMuser::IXTuser, 682
- name\_len
  - IXMtype\_definitions, 298
- nameform
  - IXMoperation, 208
- ndet
  - IXMisis\_raw\_file::IXTisis\_raw\_file, 630
  - IXMspectra::IXTspectra, 670
- NE, 329
- neutron\_mass
  - IXMphysical\_constants, 221
- neutron\_mass\_mantissa
  - IXMphysical\_constants, 221
- new
  - IXMtools, 289
- nexus\_error
  - IXMfileio, 121
- NeXus\_version
  - NXmodule, 343
- nmon
  - IXMisis\_raw\_file::IXTisis\_raw\_file, 630
- notequal\_status
  - IXMstatus, 271
- nper
  - IXMisis\_raw\_file::IXTisis\_raw\_file, 630
- nspl
  - IXMisis\_raw\_file::IXTisis\_raw\_file, 630
- ntcl
  - IXMisis\_raw\_file::IXTisis\_raw\_file, 630
- null\_dp
  - IXMtype\_definitions, 298
- null\_sp
  - IXMtype\_definitions, 298
- numeric\_list\_terminator
  - IXMtools, 289
- nuse
  - IXMisis\_raw\_file::IXTisis\_raw\_file, 630
- nx
  - IXMdataset\_nd::IXTdataset\_nd, 605
  - IXMtestclass::IXTtestclass, 678
- NX\_CHAR
  - NXmodule, 343
- NX\_COMP\_HUF
  - NXmodule, 343
- NX\_COMP\_LZW
  - NXmodule, 343
- NX\_COMP\_NONE
  - NXmodule, 343
- NX\_COMP\_RLE
  - NXmodule, 343
- NX\_EOD
  - NXmodule, 344
- NX\_ERROR
  - NXmodule, 344

NX\_FLOAT32  
  NXmodule, 344

NX\_FLOAT64  
  NXmodule, 344

NX\_INT16  
  NXmodule, 344

NX\_INT32  
  NXmodule, 344

NX\_INT8  
  NXmodule, 345

NX\_MAXNAMELEN  
  NXmodule, 345

NX\_MAXRANK  
  NXmodule, 345

NX\_MAXSTACK  
  NXmodule, 345

NX\_OK  
  NXmodule, 345

NX\_UINT16  
  NXmodule, 345

NX\_UINT32  
  NXmodule, 345

NX\_UINT8  
  NXmodule, 346

NX\_UNLIMITED  
  NXmodule, 346

NXACC\_CREATE  
  NXmodule, 346

NXACC\_CREATE4  
  NXmodule, 346

NXACC\_CREATE5  
  NXmodule, 346

NXACC\_CREATEXML  
  NXmodule, 346

NXACC\_RDWR  
  NXmodule, 346

NXACC\_READ  
  NXmodule, 346

NXattrdir  
  NXmodule, 332

NXclose  
  NXmodule, 332

NXclosedata  
  NXmodule, 332

NXclosegroup  
  NXmodule, 332

NXcompress  
  NXmodule, 333

NXcompress\_size  
  NXUmodule, 370

NXcompress\_type  
  NXUmodule, 370

NXCstring  
  NXmodule, 333

NXdatatype  
  NXmodule, 333

NXdims  
  NXmodule, 346  
  NXUmodule, 371

NXerror  
  NXmodule, 333

NXflush  
  NXmodule, 333

NXFstring  
  NXmodule, 333

NXgetattrinfo  
  NXmodule, 333

NXgetchar  
  NXmodule, 334  
  NXmodule::NXgetdata, 694

NXgetcharattr  
  NXmodule, 334  
  NXmodule::NXgetattr, 693

NXgetdataID  
  NXmodule, 334

NXgetgroupID  
  NXmodule, 334

NXgetgroupinfo  
  NXmodule, 334

NXgeti1  
  NXmodule, 334  
  NXmodule::NXgetdata, 694

NXgeti1attr  
  NXmodule, 335  
  NXmodule::NXgetattr, 692

NXgeti1slab  
  NXmodule, 335  
  NXmodule::NXgetslab, 696

NXgeti2  
  NXmodule, 335  
  NXmodule::NXgetdata, 694

NXgeti2attr  
  NXmodule, 335  
  NXmodule::NXgetattr, 692

NXgeti2slab  
  NXmodule, 335  
  NXmodule::NXgetslab, 696

NXgeti4  
  NXmodule, 336  
  NXmodule::NXgetdata, 694

NXgeti4attr  
  NXmodule, 336  
  NXmodule::NXgetattr, 692

NXgeti4slab  
  NXmodule, 336  
  NXmodule::NXgetslab, 696

NXgetinfo  
  NXmodule, 336

- NXgetnextattr
  - NXmodule, 336
- NXgetnextentry
  - NXmodule, 336
- NXgetr4
  - NXmodule, 337
  - NXmodule::NXgetdata, 694
- NXgetr4attr
  - NXmodule, 337
  - NXmodule::NXgetattr, 692
- NXgetr4slab
  - NXmodule, 337
  - NXmodule::NXgetslab, 696
- NXgetr8
  - NXmodule, 337
  - NXmodule::NXgetdata, 694
- NXgetr8attr
  - NXmodule, 337
  - NXmodule::NXgetattr, 692
- NXgetr8slab
  - NXmodule, 337
  - NXmodule::NXgetslab, 696
- NXgroupdir
  - NXmodule, 338
- NXi1
  - NXmodule, 346
- NXi2
  - NXmodule, 346
- NXi4
  - NXmodule, 347
- NXinitattrdir
  - NXmodule, 338
- NXinitgroupdir
  - NXmodule, 338
- NXmakedata
  - NXmodule, 338
- NXmakegroup
  - NXmodule, 338
- NXmakelink
  - NXmodule, 339
- NXmodule, 330
  - buffer\_i1, 343
  - buffer\_i2, 343
  - buffer\_i4, 343
  - buffer\_r4, 343
  - buffer\_r8, 343
  - NeXus\_version, 343
  - NX\_CHAR, 343
  - NX\_COMP\_HUF, 343
  - NX\_COMP\_LZW, 343
  - NX\_COMP\_NONE, 343
  - NX\_COMP\_RLE, 343
  - NX\_EOD, 344
  - NX\_ERROR, 344
  - NX\_FLOAT32, 344
  - NX\_FLOAT64, 344
  - NX\_INT16, 344
  - NX\_INT32, 344
  - NX\_INT8, 345
  - NX\_MAXNAMELEN, 345
  - NX\_MAXRANK, 345
  - NX\_MAXSTACK, 345
  - NX\_OK, 345
  - NX\_UINT16, 345
  - NX\_UINT32, 345
  - NX\_UINT8, 346
  - NX\_UNLIMITED, 346
  - NXACC\_CREATE, 346
  - NXACC\_CREATE4, 346
  - NXACC\_CREATE5, 346
  - NXACC\_CREATEXML, 346
  - NXACC\_RDWR, 346
  - NXACC\_READ, 346
  - NXattrdir, 332
  - NXclose, 332
  - NXclosedata, 332
  - NXclosegroup, 332
  - NXcompress, 333
  - NXCstring, 333
  - NXdatatype, 333
  - NXdims, 346
  - NXerror, 333
  - NXflush, 333
  - NXFstring, 333
  - NXgetattrinfo, 333
  - NXgetchar, 334
  - NXgetcharattr, 334
  - NXgetdataID, 334
  - NXgetgroupID, 334
  - NXgetgroupinfo, 334
  - NXgetil, 334
  - NXgetilattr, 335
  - NXgetilslab, 335
  - NXgeti2, 335
  - NXgeti2attr, 335
  - NXgeti2slab, 335
  - NXgeti4, 336
  - NXgeti4attr, 336
  - NXgeti4slab, 336
  - NXgetinfo, 336
  - NXgetnextattr, 336
  - NXgetnextentry, 336
  - NXgetr4, 337
  - NXgetr4attr, 337
  - NXgetr4slab, 337
  - NXgetr8, 337
  - NXgetr8attr, 337
  - NXgetr8slab, 337

- NXgroupdir, 338
- NXi1, 346
- NXi2, 346
- NXi4, 347
- NXinitattrdir, 338
- NXinitgroupdir, 338
- NXmakedata, 338
- NXmakegroup, 338
- NXmakelink, 339
- NXopen, 339
- NXopendata, 339
- NXopengroup, 339
- NXputchar, 339
- NXputcharattr, 339
- NXputil, 340
- NXputilattr, 340
- NXputilslab, 340
- NXputi2, 340
- NXputi2attr, 340
- NXputi2slab, 340
- NXputi4, 341
- NXputi4attr, 341
- NXputi4slab, 341
- NXptr4, 341
- NXptr4attr, 341
- NXptr4slab, 341
- NXptr8, 342
- NXptr8attr, 342
- NXptr8slab, 342
- NXr4, 347
- NXr8, 347
- NXrank, 347
- NXreverse, 342
- NXsameID, 342
- NXsize, 347
- NXtype, 347
- NXmodule:NXgetattr, 692
  - NXgetcharattr, 693
  - NXgeti1attr, 692
  - NXgeti2attr, 692
  - NXgeti4attr, 692
  - NXgetr4attr, 692
  - NXgetr8attr, 692
- NXmodule:NXgetdata, 694
  - NXgetchar, 694
  - NXgeti1, 694
  - NXgeti2, 694
  - NXgeti4, 694
  - NXgetr4, 694
  - NXgetr8, 694
- NXmodule:NXgetslab, 696
  - NXgeti1slab, 696
  - NXgeti2slab, 696
  - NXgeti4slab, 696
  - NXgetr4slab, 696
  - NXgetr8slab, 696
- NXmodule:NXhandle, 698
  - opaque, 698
- NXmodule:NXlink, 699
  - ref5, 699
  - refd, 699
  - tag5, 699
- NXmodule:NXputattr, 700
  - NXputcharattr, 701
  - NXputi1attr, 700
  - NXputi2attr, 700
  - NXputi4attr, 700
  - NXptr4attr, 700
  - NXptr8attr, 700
- NXmodule:NXputdata, 702
  - NXputchar, 702
  - NXputil, 702
  - NXputi2, 702
  - NXputi4, 702
  - NXptr4, 702
  - NXptr8, 702
- NXmodule:NXputslab, 704
  - NXputi1slab, 704
  - NXputi2slab, 704
  - NXputi4slab, 704
  - NXptr4slab, 704
  - NXptr8slab, 704
- NXopen
  - NXmodule, 339
- NXopendata
  - NXmodule, 339
- NXopengroup
  - NXmodule, 339
- NXputchar
  - NXmodule, 339
  - NXmodule:NXputdata, 702
- NXputcharattr
  - NXmodule, 339
  - NXmodule:NXputattr, 701
- NXputil
  - NXmodule, 340
  - NXmodule:NXputdata, 702
- NXputilattr
  - NXmodule, 340
  - NXmodule:NXputattr, 700
- NXputilslab
  - NXmodule, 340
  - NXmodule:NXputslab, 704
- NXputi2
  - NXmodule, 340
  - NXmodule:NXputdata, 702
- NXputi2attr
  - NXmodule, 340

- NXmodule::NXputattr, 700
- NXputi2slab
  - NXmodule, 340
  - NXmodule::NXputslab, 704
- NXputi4
  - NXmodule, 341
  - NXmodule::NXputdata, 702
- NXputi4attr
  - NXmodule, 341
  - NXmodule::NXputattr, 700
- NXputi4slab
  - NXmodule, 341
  - NXmodule::NXputslab, 704
- NXputr4
  - NXmodule, 341
  - NXmodule::NXputdata, 702
- NXputr4attr
  - NXmodule, 341
  - NXmodule::NXputattr, 700
- NXputr4slab
  - NXmodule, 341
  - NXmodule::NXputslab, 704
- NXputr8
  - NXmodule, 342
  - NXmodule::NXputdata, 702
- NXputr8attr
  - NXmodule, 342
  - NXmodule::NXputattr, 700
- NXputr8slab
  - NXmodule, 342
  - NXmodule::NXputslab, 704
- NXr4
  - NXmodule, 347
- NXr8
  - NXmodule, 347
- NXrank
  - NXmodule, 347
  - NXUmodule, 371
- NXreverse
  - NXmodule, 342
- NXsameID
  - NXmodule, 342
- NXsize
  - NXmodule, 347
  - NXUmodule, 371
- NXtype
  - NXmodule, 347
  - NXUmodule, 371
- NXUfindattr
  - NXUmodule, 350
- NXUfindaxis
  - NXUmodule, 350
- NXUfindclass
  - NXUmodule, 350
- NXUfinddata
  - NXUmodule, 351
- NXUfindgroup
  - NXUmodule, 351
- NXUfindlink
  - NXUmodule, 352
- NXUfindsignal
  - NXUmodule, 352
- NXUmodule, 348
  - data\_dimensions, 369
  - data\_name, 369
  - data\_rank, 369
  - data\_type, 369
  - file\_id, 369
  - group\_level, 370
  - NXcompress\_size, 370
  - NXcompress\_type, 370
  - NXdims, 371
  - NXrank, 371
  - NXsize, 371
  - NXtype, 371
  - NXUfindattr, 350
  - NXUfindaxis, 350
  - NXUfindclass, 350
  - NXUfinddata, 351
  - NXUfindgroup, 351
  - NXUfindlink, 352
  - NXUfindsignal, 352
  - NXUpreparedata, 353
  - NXUread1Dcarray, 353
  - NXUread2Di4array, 353
  - NXUread2Dr4array, 354
  - NXUread2Dr8array, 354
  - NXUread3Di4array, 354
  - NXUread3Dr4array, 354
  - NXUread3Dr8array, 355
  - NXUread4Di4array, 355
  - NXUread4Dr4array, 355
  - NXUread4Dr8array, 355
  - NXUreadchar, 356
  - NXUreadi4, 356
  - NXUreadi4array, 356
  - NXUreadr4, 356
  - NXUreadr4array, 356
  - NXUreadr8, 357
  - NXUreadr8array, 357
  - NXUresumelink, 357
  - NXUsearchgroup, 358
  - NXUsetcompress, 358
  - NXUwrite1Dcarray, 359
  - NXUwrite2Di4array, 359
  - NXUwrite2Dr4array, 360
  - NXUwrite2Dr8array, 360
  - NXUwrite3Di4array, 361

- NXUwrite3Dr4array, 362
- NXUwrite3Dr8array, 362
- NXUwrite4Di4array, 363
- NXUwrite4Dr4array, 363
- NXUwrite4Dr8array, 363
- NXUwritechar, 364
- NXUwriteglobals, 365
- NXUwritegroup, 365
- NXUwritei4, 365
- NXUwritei4array, 366
- NXUwriter4, 366
- NXUwriter4array, 367
- NXUwriter8, 368
- NXUwriter8array, 368
- status, 371
- NXUmodule::data\_type, 378
- NXUmodule::NXUreaddata, 706
  - NXUread1Dcarray, 707
  - NXUread2Di4array, 707
  - NXUread2Dr4array, 707
  - NXUread2Dr8array, 707
  - NXUread3Di4array, 707
  - NXUread3Dr4array, 707
  - NXUread3Dr8array, 707
  - NXUread4Di4array, 707
  - NXUread4Dr4array, 707
  - NXUread4Dr8array, 707
  - NXUreadchar, 707
  - NXUreadi4, 707
  - NXUreadi4array, 707
  - NXUreadr4, 707
  - NXUreadr4array, 707
  - NXUreadr8, 707
  - NXUreadr8array, 707
- NXUmodule::NXUwritedata, 708
  - NXUwrite1Dcarray, 709
  - NXUwrite2Di4array, 709
  - NXUwrite2Dr4array, 709
  - NXUwrite2Dr8array, 709
  - NXUwrite3Di4array, 709
  - NXUwrite3Dr4array, 709
  - NXUwrite3Dr8array, 709
  - NXUwrite4Di4array, 709
  - NXUwrite4Dr4array, 709
  - NXUwrite4Dr8array, 709
  - NXUwritechar, 709
  - NXUwritei4, 709
  - NXUwritei4array, 709
  - NXUwriter4, 709
  - NXUwriter4array, 709
  - NXUwriter8, 709
  - NXUwriter8array, 709
- NXUpreparedata
  - NXUmodule, 353
- NXUread1Dcarray
  - NXUmodule, 353
  - NXUmodule::NXUreaddata, 707
- NXUread2Di4array
  - NXUmodule, 353
  - NXUmodule::NXUreaddata, 707
- NXUread2Dr4array
  - NXUmodule, 354
  - NXUmodule::NXUreaddata, 707
- NXUread2Dr8array
  - NXUmodule, 354
  - NXUmodule::NXUreaddata, 707
- NXUread3Di4array
  - NXUmodule, 354
  - NXUmodule::NXUreaddata, 707
- NXUread3Dr4array
  - NXUmodule, 354
  - NXUmodule::NXUreaddata, 707
- NXUread3Dr8array
  - NXUmodule, 355
  - NXUmodule::NXUreaddata, 707
- NXUread4Di4array
  - NXUmodule, 355
  - NXUmodule::NXUreaddata, 707
- NXUread4Dr4array
  - NXUmodule, 355
  - NXUmodule::NXUreaddata, 707
- NXUread4Dr8array
  - NXUmodule, 355
  - NXUmodule::NXUreaddata, 707
- NXUreadchar
  - NXUmodule, 356
  - NXUmodule::NXUreaddata, 707
- NXUreadi4
  - NXUmodule, 356
  - NXUmodule::NXUreaddata, 707
- NXUreadi4array
  - NXUmodule, 356
  - NXUmodule::NXUreaddata, 707
- NXUreadr4
  - NXUmodule, 356
  - NXUmodule::NXUreaddata, 707
- NXUreadr4array
  - NXUmodule, 356
  - NXUmodule::NXUreaddata, 707
- NXUreadr8
  - NXUmodule, 357
  - NXUmodule::NXUreaddata, 707
- NXUreadr8array
  - NXUmodule, 357
  - NXUmodule::NXUreaddata, 707
- NXUresumelink
  - NXUmodule, 357
- NXUsearchgroup

- NXUmodule, 358
- NXUsetcompress
  - NXUmodule, 358
- NXUwrite1Dcarray
  - NXUmodule, 359
  - NXUmodule::NXUwritedata, 709
- NXUwrite2Di4array
  - NXUmodule, 359
  - NXUmodule::NXUwritedata, 709
- NXUwrite2Dr4array
  - NXUmodule, 360
  - NXUmodule::NXUwritedata, 709
- NXUwrite2Dr8array
  - NXUmodule, 360
  - NXUmodule::NXUwritedata, 709
- NXUwrite3Di4array
  - NXUmodule, 361
  - NXUmodule::NXUwritedata, 709
- NXUwrite3Dr4array
  - NXUmodule, 362
  - NXUmodule::NXUwritedata, 709
- NXUwrite3Dr8array
  - NXUmodule, 362
  - NXUmodule::NXUwritedata, 709
- NXUwrite4Di4array
  - NXUmodule, 363
  - NXUmodule::NXUwritedata, 709
- NXUwrite4Dr4array
  - NXUmodule, 363
  - NXUmodule::NXUwritedata, 709
- NXUwrite4Dr8array
  - NXUmodule, 363
  - NXUmodule::NXUwritedata, 709
- NXUwritechar
  - NXUmodule, 364
  - NXUmodule::NXUwritedata, 709
- NXUwriteglobals
  - NXUmodule, 365
- NXUwritegroup
  - NXUmodule, 365
- NXUwritei4
  - NXUmodule, 365
  - NXUmodule::NXUwritedata, 709
- NXUwritei4array
  - NXUmodule, 366
  - NXUmodule::NXUwritedata, 709
- NXUwriter4
  - NXUmodule, 366
  - NXUmodule::NXUwritedata, 709
- NXUwriter4array
  - NXUmodule, 367
  - NXUmodule::NXUwritedata, 709
- NXUwriter8
  - NXUmodule, 368
- NXUmodule::NXUwritedata, 709
- NXUwriter8array
  - NXUmodule, 368
  - NXUmodule::NXUwritedata, 709
- object
  - IXMwrapped\_var::IXTwrapped\_var, 688
- ok
  - IXMtools, 289
  - IXMunits\_utils, 307
- old
  - IXMtools, 289
- oldnew
  - IXMtools, 289
- omega
  - IXMsample::IXTsample, 666
- opaque
  - NXmodule::NXhandle, 698
- OPEN\_DATA\_FILE
  - IXMisis\_raw\_file.f90, 793
- OPEN\_FILE
  - IXMisis\_raw\_file.f90, 794
- orientation
  - IXMgeometry::IXTgeometry, 621
- parameter
  - IXMneutron\_units, 195
- parent
  - IXMgroup::IXTgroup, 622
- parent\_byid
  - IXMgroups, 133
- parent\_byname
  - IXMgroups, 134
- parent\_id\_byid
  - IXMgroups, 134
  - IXMgroups::IXFparent\_id\_groups, 500
- parent\_id\_byname
  - IXMgroups, 134
  - IXMgroups::IXFparent\_id\_groups, 500
- parent\_list\_byid
  - IXMgroups, 134
  - IXMgroups::IXFparent\_list\_groups, 501
- parent\_list\_byname
  - IXMgroups, 135
  - IXMgroups::IXFparent\_list\_groups, 501
- path
  - IXMdata\_source::IXTdata\_source, 595
  - IXMoperation::IXTop\_fileread, 644
  - IXMoperation::IXTop\_filewrite, 645
- peaks
  - IXMrunfile::IXTrunfile, 663
- period
  - IXMfermi\_chopper::IXTfermi\_chopper, 618



- phi
  - IXMdetector::IXTdetector, 613
- pi\_dp
  - IXMtype\_definitions, 298
- pi\_sp
  - IXMtype\_definitions, 298
- pio2\_dp
  - IXMtype\_definitions, 298
- pio2\_sp
  - IXMtype\_definitions, 299
- plhs
  - IXMoperation::IXTop\_matlabwrite, 650
- populate\_common
  - IXMdata, 42
- populate\_list\_dso\_isis
  - IXMspectra, 268
  - IXMspectra::IXFpopulate\_spectra, 515
- popunitsrebin\_datasets
  - IXMdata, 43
- position
  - IXMsample::IXTsample, 667
- pressure
  - IXMsample::IXTsample, 666
- prhs
  - IXMoperation::IXTop\_matlabread, 649
  - IXMoperation::IXTop\_matlabwrite, 650
- program\_name
  - IXMrunfile::IXTrunfile, 662
- prompt
  - IXMtools, 287
- psi
  - IXMsample::IXTsample, 666
- ptr
  - IXMwrapped\_var::IXTwrapped\_object, 686
- pulse\_model
  - IXMmoderator::IXTmoderator, 639
- pulse\_pars
  - IXMmoderator::IXTmoderator, 639
- qopt\_1
  - IXMneutron\_units, 195
- qopt\_2
  - IXMneutron\_units, 195
- R\_inssor
  - m\_refsor, 325
- R\_mrgrnk
  - m\_mrgrnk::IXFrank, 524
- R\_nearless
  - m\_unirnk, 326
  - m\_unirnk::IXFunique\_rank, 565
- R\_refsor
  - m\_refsor, 325
- r\_refsor
  - m\_refsor::IXFsort, 542
- R\_subsor
  - m\_refsor, 325
- R\_unirnk
  - m\_unirnk, 326
- R\_valmed
  - m\_mrgrnk, 323
- r\_valmed
  - m\_mrgrnk::IXFrank, 524
- rad\_to\_deg\_dp
  - IXMtype\_definitions, 299
- rad\_to\_deg\_sp
  - IXMtype\_definitions, 299
- radius
  - IXMaperture::IXTaperture, 585
  - IXMfermi\_chopper::IXTfermi\_chopper, 618
  - IXMsample::IXTsample, 667
- read
  - IXMtools, 289
- READ\_DATA
  - IXMisis\_raw\_file.f90, 794
- read\_line
  - IXMtools, 287
- readwr
  - IXMtools, 289
- realform
  - IXMoperation, 208
- ref5
  - NXmodule::NXlink, 699
- ref\_count
  - IXMdetector::IXTdetector, 613
- refd
  - NXmodule::NXlink, 699
- reflection
  - IXMcrystalanalyser::IXTcrystalanalyser, 592
- remap\_data
  - IXMdata, 43
- remark
  - IXMtools, 288
- remove\_byid
  - IXMgroups, 135
  - IXMgroups::IXFremove\_groups, 525
- remove\_byname
  - IXMgroups, 135
  - IXMgroups::IXFremove\_groups, 525
- remove\_source\_status
  - IXMstatus, 271
- removeBlanks
  - IXMoperation, 206
- report\_global\_status
  - IXMstatus, 272

- IXMstatus::IXFreport\_status, 526
- report\_local\_status
  - IXMstatus, 272
  - IXMstatus::IXFreport\_status, 526
- rho\_h
  - IXMcrystalanalyser::IXTcrystalanalyser, 592
- rho\_v
  - IXMcrystalanalyser::IXTcrystalanalyser, 592
- rotmat
  - IXMorientation::IXTorientation, 657
- run\_number
  - IXMrunfile::IXTrunfile, 662
- runid
  - IXMisis\_raw\_file::IXTisis\_raw\_file, 630
- runOperationAlloc1c
  - IXMoperation::IXFoperation\_run\_alloc, 494
- runOperationAlloc1d
  - IXMoperation::IXFoperation\_run\_alloc, 494
- runOperationAlloc1i
  - IXMoperation::IXFoperation\_run\_alloc, 494
- runOperationAlloc2d
  - IXMoperation::IXFoperation\_run\_alloc, 494
- runOperationAlloc2i
  - IXMoperation::IXFoperation\_run\_alloc, 494
- runOperationAlloc3d
  - IXMoperation::IXFoperation\_run\_alloc, 494
- runOperationAlloc3i
  - IXMoperation::IXFoperation\_run\_alloc, 494
- runOperationAlloc4d
  - IXMoperation::IXFoperation\_run\_alloc, 494
- runOperationAlloc4i
  - IXMoperation::IXFoperation\_run\_alloc, 494
- runOperationCharacter
  - IXMoperation, 206
- runOperationInteger
  - IXMoperation, 206
- runOperationLogical
  - IXMoperation, 206
- runOperationPrint1c
  - IXMoperation::IXFoperationPrint, 498
- runOperationPrint1d
  - IXMoperation::IXFoperationPrint, 498
- runOperationPrint1i
  - IXMoperation::IXFoperationPrint, 498
- runOperationPrint2c
  - IXMoperation::IXFoperationPrint, 498
- runOperationPrint2d
  - IXMoperation::IXFoperationPrint, 498
- runOperationPrint2i
  - IXMoperation::IXFoperationPrint, 498
- runOperationPrint3c
  - IXMoperation::IXFoperationPrint, 498
- runOperationPrint3d
  - IXMoperation::IXFoperationPrint, 498
- runOperationPrint3i
  - IXMoperation::IXFoperationPrint, 498
- runOperationPrint4c
  - IXMoperation::IXFoperationPrint, 498
- runOperationPrint4d
  - IXMoperation::IXFoperationPrint, 498
- runOperationPrint4i
  - IXMoperation::IXFoperationPrint, 498
- runOperationPtr1d
  - IXMoperation::IXFoperation\_run\_ptr, 495
- runOperationPtr1i
  - IXMoperation::IXFoperation\_run\_ptr, 495
- runOperationPtr2d
  - IXMoperation::IXFoperation\_run\_ptr, 495
- runOperationPtr2i
  - IXMoperation::IXFoperation\_run\_ptr, 495
- runOperationPtr3d
  - IXMoperation::IXFoperation\_run\_ptr, 495
- runOperationPtr3i
  - IXMoperation::IXFoperation\_run\_ptr, 495
- runOperationPtr4d
  - IXMoperation::IXFoperation\_run\_ptr, 495
- runOperationPtr4i
  - IXMoperation::IXFoperation\_run\_ptr, 495
- runOperationReal
  - IXMoperation, 207
- s
  - IXMdataset\_nd::IXTdataset\_nd, 606
- s\_label
  - IXMdataset\_nd::IXTdataset\_nd, 606
- s\_units
  - IXMdataset\_1d::IXTdataset\_1d, 597
  - IXMdataset\_2d::IXTdataset\_2d, 599
  - IXMdataset\_3d::IXTdataset\_3d, 600

- IXMdataset\_4d::IXTdataset\_4d, 603
- sample
  - IXMrunfile::IXTrunfile, 663
- set
  - IXMoperation::IXToperation, 654
- setbase
  - IXMdataset\_1d, 57
- seti\_1d
  - IXMbase, 27
  - IXMbase::IXFset\_integer\_array, 527
- seti\_2d
  - IXMbase, 27
  - IXMbase::IXFset\_integer\_array, 527
- setr\_1d
  - IXMbase, 27
  - IXMbase::IXFset\_real\_array, 528
- setr\_2d
  - IXMbase, 27
  - IXMbase::IXFset\_real\_array, 528
- setup\_binary\_op\_dataset\_1d
  - IXMdataset\_1d, 57
- setup\_binary\_op\_dataset\_2d
  - IXMdataset\_2d, 74
- setup\_unary\_op\_dataset\_1d
  - IXMdataset\_1d, 57
- setup\_unary\_op\_dataset\_2d
  - IXMdataset\_2d, 74
- severity
  - IXMstatus::IXTstatus, 672
  - IXMstatus::IXTstatus\_condition, 674
- shape
  - IXMaperture::IXTaperture, 584
  - IXMgeometry::IXTgeometry, 621
  - IXMsample::IXTsample, 666
- short\_len
  - IXMtype\_definitions, 299
- shutfl
  - IXMtools, 288
- sigma
  - IXMmoments::IXTmoments, 641
- sign
  - ieee\_double, 379
  - ieee\_single, 380
  - vax\_double, 713
  - vax\_single, 714
- signal
  - IXMdataset\_1d::IXTdataset\_1d, 596
  - IXMdataset\_2d::IXTdataset\_2d, 598
  - IXMdataset\_3d::IXTdataset\_3d, 600
  - IXMdataset\_4d::IXTdataset\_4d, 603
  - IXMdatum\_array::IXTdatum\_array, 608
- size\_i
  - IXMinput\_source, 141
  - IXMinput\_source::IXFsize, 538
- size\_i\_array
  - IXMinput\_source, 141
  - IXMinput\_source::IXFsize, 538
- slit\_spacing
  - IXMfermi\_chopper::IXTfermi\_chopper, 618
- slit\_width
  - IXMfermi\_chopper::IXTfermi\_chopper, 618
- source
  - IXMinstrument::IXTinstrument, 629
  - IXMstatus::IXTstatus\_condition, 674
- source\_list
  - IXMstatus::IXTstatus, 673
- source\_size
  - IXMstatus::IXTstatus, 673
- source\_top
  - IXMstatus::IXTstatus, 673
- sources
  - IXMinput\_source::IXTinput\_source, 626
- sp
  - IXMtype\_definitions, 299
- space\_group
  - IXMlattice::IXTlattice, 633
- spc
  - IXMtype\_definitions, 299
- spec\_ind
  - IXMmap::IXTmap, 634
  - IXMws\_bridge::IXTws\_bridge, 690
- spec\_lookup
  - IXMspectra::IXTspectra, 670
- spec\_no
  - IXMmap::IXTmap, 635
  - IXMspectra::IXTspectra, 670
  - IXMsw\_bridge::IXTsw\_bridge, 675
  - IXMws\_bridge::IXTws\_bridge, 691
- spectra
  - IXMinstrument::IXTinstrument, 629
  - IXMtestclass::IXTtestclass, 678
- speed\_of\_light
  - IXMphysical\_constants, 221
- speed\_of\_light\_mantissa
  - IXMphysical\_constants, 221
- sqrt2\_dp
  - IXMtype\_definitions, 299
- sqrt2\_sp
  - IXMtype\_definitions, 299
- st\_divide\_dataset\_1d
  - IXMdataset\_1d::IXFdivide, 436
  - IXMdataset\_1d::IXFdivide\_dataset\_1d, 439
- st\_divide\_dataset\_2d
  - IXMdataset\_2d::IXFdivide, 437

- IXMdataset\_2d::IXFdivide\_dataset\_2d, 440
- st\_Divide\_datum\_array
  - IXMdatum\_array::IXFdivide, 435
  - IXMdatum\_array::IXFdivide\_Datum\_array, 442
- st\_minus\_dataset\_1d
  - IXMdataset\_1d::IXFminus, 477
  - IXMdataset\_1d::IXFminus\_dataset\_1d, 481
- st\_minus\_dataset\_2d
  - IXMdataset\_2d::IXFminus, 478
  - IXMdataset\_2d::IXFminus\_dataset\_2d, 482
- st\_Minus\_datum\_array
  - IXMdatum\_array::IXFminus, 480
  - IXMdatum\_array::IXFminus\_datum\_array, 484
- st\_plus\_dataset\_1d
  - IXMdataset\_1d::IXFplus, 502
  - IXMdataset\_1d::IXFplus\_dataset\_1d, 506
- st\_plus\_dataset\_2d
  - IXMdataset\_2d::IXFplus, 503
  - IXMdataset\_2d::IXFplus\_dataset\_2d, 507
- st\_Plus\_datum\_array
  - IXMdatum\_array::IXFplus, 505
  - IXMdatum\_array::IXFplus\_Datum\_array, 509
- st\_power\_dataset\_1d
  - IXMdataset\_1d::IXFpower, 517
  - IXMdataset\_1d::IXFpower\_dataset\_1d, 520
- st\_power\_dataset\_2d
  - IXMdataset\_2d::IXFpower, 518
  - IXMdataset\_2d::IXFpower\_dataset\_2d, 521
- st\_Power\_datum\_array
  - IXMdatum\_array::IXFpower, 516
  - IXMdatum\_array::IXFpower\_Datum\_array, 523
- st\_times\_dataset\_1d
  - IXMdataset\_1d::IXFtimes, 551
  - IXMdataset\_1d::IXFtimes\_dataset\_1d, 555
- st\_times\_dataset\_2d
  - IXMdataset\_2d::IXFtimes, 552
  - IXMdataset\_2d::IXFtimes\_dataset\_2d, 556
- st\_Times\_datum\_array
  - IXMdatum\_array::IXFtimes, 554
  - IXMdatum\_array::IXFtimes\_Datum\_array, 558
- start\_time
  - IXMrunfile::IXTrunfile, 662
- status
  - NXUmodule, 371
- stdin
  - IXMtools, 289
- stdout
  - IXMtools, 289
- sum\_data
  - IXMdata, 44
- sw\_bridge
  - IXMbridge::IXTbridge, 589
- swap\_int
  - endian\_convert.c, 724
- swap\_short
  - endian\_convert.c, 724
- t\_at\_divide\_dataset\_2d
  - IXMdataset\_2d::IXFdivide, 437
  - IXMdataset\_2d::IXFdivide\_dataset\_2d, 440
- t\_at\_minus\_dataset\_2d
  - IXMdataset\_2d::IXFminus, 478
  - IXMdataset\_2d::IXFminus\_dataset\_2d, 482
- t\_at\_plus\_dataset\_2d
  - IXMdataset\_2d::IXFplus, 503
  - IXMdataset\_2d::IXFplus\_dataset\_2d, 507
- t\_at\_times\_dataset\_2d
  - IXMdataset\_2d::IXFtimes, 552
  - IXMdataset\_2d::IXFtimes\_dataset\_2d, 556
- ta\_divide\_dataset\_1d
  - IXMdataset\_1d::IXFdivide, 436
  - IXMdataset\_1d::IXFdivide\_dataset\_1d, 439
- ta\_divide\_dataset\_2d
  - IXMdataset\_2d::IXFdivide, 437
  - IXMdataset\_2d::IXFdivide\_dataset\_2d, 440
- ta\_minus\_dataset\_1d
  - IXMdataset\_1d::IXFminus, 477
  - IXMdataset\_1d::IXFminus\_dataset\_1d, 481
- ta\_minus\_dataset\_2d
  - IXMdataset\_2d::IXFminus, 478
  - IXMdataset\_2d::IXFminus\_dataset\_2d, 482
- ta\_plus\_dataset\_1d
  - IXMdataset\_1d::IXFplus, 502
  - IXMdataset\_1d::IXFplus\_dataset\_1d, 506
- ta\_Plus\_dataset\_2d

- IXMdataset\_2d::IXFplus, 503
- IXMdataset\_2d::IXFplus\_dataset\_2d, 507
- ta\_times\_dataset\_1d
  - IXMdataset\_1d::IXFtimes, 551
  - IXMdataset\_1d::IXFtimes\_dataset\_1d, 555
- ta\_times\_dataset\_2d
  - IXMdataset\_2d::IXFtimes, 552
  - IXMdataset\_2d::IXFtimes\_dataset\_2d, 556
- tag5
  - NXmodule::NXlink, 699
- telephone
  - IXMuser::IXTuser, 683
- temperature
  - IXMmoderator::IXTmoderator, 639
  - IXMsample::IXTsample, 665
- theta
  - IXMdetector::IXTdetector, 613
- thickness
  - IXMattenuator::IXTattenuator, 587
  - IXMmoderator::IXTmoderator, 639
- title
  - IXMdataset\_1d::IXTdataset\_1d, 596
  - IXMdataset\_2d::IXTdataset\_2d, 598
  - IXMdataset\_3d::IXTdataset\_3d, 600
  - IXMdataset\_4d::IXTdataset\_4d, 603
  - IXMdataset\_nd::IXTdataset\_nd, 605
  - IXMrunfile::IXTrunfile, 662
- total\_charge
  - IXMrunfile::IXTrunfile, 662
- total\_good\_frames
  - IXMrunfile::IXTrunfile, 662
- total\_index
  - IXMeffdet\_index::IXTeffdet\_index, 616
- total\_raw\_frames
  - IXMrunfile::IXTrunfile, 662
- total\_spec
  - IXMmap::IXTmap, 634
  - IXMws\_bridge::IXTws\_bridge, 690
- total\_work
  - IXMsw\_bridge::IXTsw\_bridge, 675
- trail\_space
  - IXMtools, 289
- translation
  - IXMgeometry::IXTgeometry, 621
- TRUELEN
  - IXMisis\_raw\_file.f90, 795
- ts\_divide\_dataset\_1d
  - IXMdataset\_1d::IXFdivide, 436
  - IXMdataset\_1d::IXFdivide\_dataset\_1d, 439
- ts\_divide\_dataset\_2d
  - IXMdataset\_2d::IXFdivide, 437
  - IXMdataset\_2d::IXFdivide\_dataset\_2d, 440
- ts\_Divide\_datum\_array
  - IXMdatum\_array::IXFdivide, 435
  - IXMdatum\_array::IXFdivide\_Datum\_array, 442
- ts\_minus\_dataset\_1d
  - IXMdataset\_1d::IXFminus, 477
  - IXMdataset\_1d::IXFminus\_dataset\_1d, 481
- ts\_minus\_dataset\_2d
  - IXMdataset\_2d::IXFminus, 478
  - IXMdataset\_2d::IXFminus\_dataset\_2d, 482
- ts\_Minus\_datum\_array
  - IXMdatum\_array::IXFminus, 480
  - IXMdatum\_array::IXFminus\_datum\_array, 484
- ts\_plus\_dataset\_1d
  - IXMdataset\_1d::IXFplus, 502
  - IXMdataset\_1d::IXFplus\_dataset\_1d, 506
- ts\_plus\_dataset\_2d
  - IXMdataset\_2d::IXFplus, 503
  - IXMdataset\_2d::IXFplus\_dataset\_2d, 507
- ts\_Plus\_datum\_array
  - IXMdatum\_array::IXFplus, 505
  - IXMdatum\_array::IXFplus\_Datum\_array, 509
- ts\_power\_dataset\_1d
  - IXMdataset\_1d::IXFpower, 517
  - IXMdataset\_1d::IXFpower\_dataset\_1d, 520
- ts\_power\_dataset\_2d
  - IXMdataset\_2d::IXFpower, 518
  - IXMdataset\_2d::IXFpower\_dataset\_2d, 521
- ts\_Power\_datum\_array
  - IXMdatum\_array::IXFpower, 516
  - IXMdatum\_array::IXFpower\_Datum\_array, 523
- ts\_times\_dataset\_1d
  - IXMdataset\_1d::IXFtimes, 551
  - IXMdataset\_1d::IXFtimes\_dataset\_1d, 555
- ts\_times\_dataset\_2d
  - IXMdataset\_2d::IXFtimes, 552
  - IXMdataset\_2d::IXFtimes\_dataset\_2d, 556
- ts\_Times\_datum\_array
  - IXMdatum\_array::IXFtimes, 554

- IXMdatum\_array::IXFtimes\_Datum\_array, 558
- tt\_divide\_dataset\_1d
  - IXMdataset\_1d::IXFdivide, 436
  - IXMdataset\_1d::IXFdivide\_dataset\_1d, 439
- tt\_divide\_dataset\_2d
  - IXMdataset\_2d::IXFdivide, 437
  - IXMdataset\_2d::IXFdivide\_dataset\_2d, 440
- tt\_Divide\_datum\_array
  - IXMdatum\_array::IXFdivide, 435
  - IXMdatum\_array::IXFdivide\_Datum\_array, 442
- tt\_minus\_dataset\_1d
  - IXMdataset\_1d::IXFminus, 477
  - IXMdataset\_1d::IXFminus\_dataset\_1d, 481
- tt\_minus\_dataset\_2d
  - IXMdataset\_2d::IXFminus, 478
  - IXMdataset\_2d::IXFminus\_dataset\_2d, 482
- tt\_Minus\_datum\_array
  - IXMdatum\_array::IXFminus, 480
  - IXMdatum\_array::IXFminus\_datum\_array, 484
- tt\_plus\_dataset\_1d
  - IXMdataset\_1d::IXFplus, 502
  - IXMdataset\_1d::IXFplus\_dataset\_1d, 506
- tt\_plus\_dataset\_2d
  - IXMdataset\_2d::IXFplus, 503
  - IXMdataset\_2d::IXFplus\_dataset\_2d, 507
- tt\_Plus\_datum\_array
  - IXMdatum\_array::IXFplus, 505
  - IXMdatum\_array::IXFplus\_Datum\_array, 509
- tt\_power\_dataset\_1d
  - IXMdataset\_1d::IXFpower, 517
  - IXMdataset\_1d::IXFpower\_dataset\_1d, 520
- tt\_power\_dataset\_2d
  - IXMdataset\_2d::IXFpower, 518
  - IXMdataset\_2d::IXFpower\_dataset\_2d, 521
- tt\_Power\_datum\_array
  - IXMdatum\_array::IXFpower, 516
  - IXMdatum\_array::IXFpower\_Datum\_array, 523
- tt\_times\_dataset\_1d
  - IXMdataset\_1d::IXFtimes, 551
  - IXMdataset\_1d::IXFtimes\_dataset\_1d, 555
- tt\_times\_dataset\_2d
  - IXMdataset\_2d::IXFtimes, 552
  - IXMdataset\_2d::IXFtimes\_dataset\_2d, 556
- tt\_Times\_datum\_array
  - IXMdatum\_array::IXFtimes, 554
  - IXMdatum\_array::IXFtimes\_Datum\_array, 558
- twopi\_dp
  - IXMtype\_definitions, 299
- twopi\_sp
  - IXMtype\_definitions, 299
- type
  - IXMshape::IXTshape, 668
- type\_index
  - IXMdetector::IXTdetector, 614
- u\_0
  - IXMneutron\_units, 195
- u\_1
  - IXMneutron\_units, 196
- u\_2
  - IXMneutron\_units, 196
- unitno
  - IXMtools, 288
- units
  - IXMunits::IXTunits, 681
- units\_array
  - IXMdataset\_2d, 75
  - IXMdataset\_2d::IXFunits, 566
  - IXMdataset\_2d::IXFunits\_dataset\_2d, 567
- units\_array\_array
  - IXMdataset\_2d, 75
  - IXMdataset\_2d::IXFunits, 566
  - IXMdataset\_2d::IXFunits\_dataset\_2d, 567
- units\_check\_codes
  - IXMunits\_utils, 305
- units\_check\_parameters
  - IXMunits\_utils, 305
- units\_coefficients
  - IXMunits\_utils, 305
- units\_common
  - IXMdataset\_2d, 75
- units\_composite\_coefficients
  - IXMunits\_utils, 306
- units\_rebinXdesc\_runfile
  - IXMrunfile, 244
  - IXMrunfile::IXFunits\_runfile, 569
- units\_rebinXref\_runfile
  - IXMrunfile, 244
  - IXMrunfile::IXFunits\_runfile, 569
- units\_runfile

- IXMrunfile, 244
- IXMrunfile::IXFunits\_runfile, 569
- units\_single\_array
  - IXMdataset\_2d, 76
  - IXMdataset\_2d::IXFunits, 566
  - IXMdataset\_2d::IXFunits\_dataset\_2d, 567
- units\_xconvert
  - IXMunits\_utils, 306
- unwrap\_alloc\_char1
  - IXMwrapped\_var::IXFunwrap\_varAlloc, 574
- unwrap\_alloc\_dp1
  - IXMwrapped\_var::IXFunwrap\_varAlloc, 574
- unwrap\_alloc\_dp2
  - IXMwrapped\_var::IXFunwrap\_varAlloc, 574
- unwrap\_alloc\_dp3
  - IXMwrapped\_var::IXFunwrap\_varAlloc, 574
- unwrap\_alloc\_dp4
  - IXMwrapped\_var::IXFunwrap\_varAlloc, 574
- unwrap\_alloc\_i1
  - IXMwrapped\_var::IXFunwrap\_varAlloc, 574
- unwrap\_alloc\_i2
  - IXMwrapped\_var::IXFunwrap\_varAlloc, 574
- unwrap\_alloc\_i3
  - IXMwrapped\_var::IXFunwrap\_varAlloc, 574
- unwrap\_alloc\_i4
  - IXMwrapped\_var::IXFunwrap\_varAlloc, 574
- unwrap\_char
  - IXMwrapped\_var, 315
  - IXMwrapped\_var::IXFunwrap\_var, 573
- unwrap\_char1
  - IXMwrapped\_var::IXFunwrap\_var, 573
- unwrap\_dp
  - IXMwrapped\_var, 315
  - IXMwrapped\_var::IXFunwrap\_var, 572
- unwrap\_dp1
  - IXMwrapped\_var::IXFunwrap\_var, 572
- unwrap\_dp2
  - IXMwrapped\_var::IXFunwrap\_var, 573
- unwrap\_dp3
  - IXMwrapped\_var::IXFunwrap\_var, 573
- unwrap\_dp4
  - IXMwrapped\_var::IXFunwrap\_var, 573
- unwrap\_i
  - IXMwrapped\_var, 316
- IXMwrapped\_var::IXFunwrap\_var, 572
- unwrap\_i1
  - IXMwrapped\_var::IXFunwrap\_var, 572
- unwrap\_i2
  - IXMwrapped\_var::IXFunwrap\_var, 572
- unwrap\_i3
  - IXMwrapped\_var::IXFunwrap\_var, 572
- unwrap\_i4
  - IXMwrapped\_var::IXFunwrap\_var, 572
- unwrap\_logval
  - IXMwrapped\_var, 316
  - IXMwrapped\_var::IXFunwrap\_var, 573
- unwrap\_object
  - IXMwrapped\_var, 316
  - IXMwrapped\_var::IXFunwrap\_var, 573
- unwrap\_ptr\_char1
  - IXMwrapped\_var::IXFunwrap\_varPtr, 575
- unwrap\_ptr\_dp1
  - IXMwrapped\_var::IXFunwrap\_varPtr, 575
- unwrap\_ptr\_dp2
  - IXMwrapped\_var::IXFunwrap\_varPtr, 575
- unwrap\_ptr\_dp3
  - IXMwrapped\_var::IXFunwrap\_varPtr, 575
- unwrap\_ptr\_dp4
  - IXMwrapped\_var::IXFunwrap\_varPtr, 575
- unwrap\_ptr\_i1
  - IXMwrapped\_var::IXFunwrap\_varPtr, 575
- unwrap\_ptr\_i2
  - IXMwrapped\_var::IXFunwrap\_varPtr, 575
- unwrap\_ptr\_i3
  - IXMwrapped\_var::IXFunwrap\_varPtr, 575
- unwrap\_ptr\_i4
  - IXMwrapped\_var::IXFunwrap\_varPtr, 575
- upcase
  - IXMtools, 288
- UPDATE\_CRPT\_SPECIALS
  - IXMisis\_raw\_file.f90, 795
- upper\_index\_dp
  - IXMindex, 139
- upper\_index\_i4b
  - IXMindex, 139
- upper\_index\_sp
  - IXMindex, 139
- users
  - IXMrunfile::IXTrunfile, 663

- uvec
  - IXMsample::IXTsample, 666
- val
  - IXMdatum::IXTdatum, 607
  - IXMtestclass::IXTtestclass, 678
- val\_array
  - IXMtestclass::IXTtestclass, 678
- val\_stat
  - IXMtestclass::IXTtestclass, 678
- valid
  - IXMbase::IXTbase, 588
- var
  - IXMoperation::IXTop\_get, 646
  - IXMoperation::IXTop\_set, 651
- vartype
  - IXMwrapped\_var::IXTwrapped\_var, 688
- VAX\_DBL\_BIAS
  - endian\_convert.c, 725
- vax\_double, 713
  - exp, 713
  - mantissa1, 713
  - mantissa2, 713
  - mantissa3, 713
  - mantissa4, 713
  - sign, 713
- vax\_single, 714
  - exp, 714
  - mantissa1, 714
  - mantissa2, 714
  - sign, 714
- VAX\_SNG\_BIAS
  - endian\_convert.c, 725
- vax\_to\_local\_int
  - endian\_convert.c, 726
  - endian\_convert.h, 728
- vax\_to\_local\_ints
  - endian\_convert.c, 726
  - endian\_convert.h, 728
- vax\_to\_local\_short
  - endian\_convert.c, 726
  - endian\_convert.h, 728
- vax\_to\_local\_shorts
  - endian\_convert.c, 726
  - endian\_convert.h, 729
- vaxf\_to\_local
  - endian\_convert.c, 726
  - endian\_convert.h, 729
- vector
  - IXMtranslation::IXTtranslation, 680
- vert\_posn
  - IXMaperture::IXTaperture, 585
- vvec
  - IXMsample::IXTsample, 666
- wall\_thickness
  - IXMdet\_he3::IXTdet\_he3, 609
- warn
  - IXMtools, 290
  - IXMunits\_utils, 307
- width
  - IXMaperture::IXTaperture, 585
  - IXMcrystalanalyser::IXTcrystalanalyser, 592
  - IXMfermi\_chopper::IXTfermi\_chopper, 618
  - IXMmoderator::IXTmoderator, 639
- work\_ind
  - IXMsw\_bridge::IXTsw\_bridge, 675
- work\_no
  - IXMmap::IXTmap, 634
  - IXMsw\_bridge::IXTsw\_bridge, 676
  - IXMworkspace::IXTworkspace, 685
  - IXMws\_bridge::IXTws\_bridge, 690
- workspace
  - IXMdata::IXTdata, 593
- wrap\_char
  - IXMwrapped\_var, 316
  - IXMwrapped\_var::IXFwrap\_var, 583
- wrap\_char1
  - IXMwrapped\_var::IXFwrap\_var, 583
- wrap\_dp
  - IXMwrapped\_var, 316
  - IXMwrapped\_var::IXFwrap\_var, 582
- wrap\_dp1
  - IXMwrapped\_var::IXFwrap\_var, 582
- wrap\_dp2
  - IXMwrapped\_var::IXFwrap\_var, 583
- wrap\_dp3
  - IXMwrapped\_var::IXFwrap\_var, 583
- wrap\_dp4
  - IXMwrapped\_var::IXFwrap\_var, 583
- wrap\_i
  - IXMwrapped\_var, 316
  - IXMwrapped\_var::IXFwrap\_var, 582
- wrap\_i1
  - IXMwrapped\_var::IXFwrap\_var, 582
- wrap\_i2
  - IXMwrapped\_var::IXFwrap\_var, 582
- wrap\_i3
  - IXMwrapped\_var::IXFwrap\_var, 582
- wrap\_i4
  - IXMwrapped\_var::IXFwrap\_var, 582
- wrap\_logval
  - IXMwrapped\_var, 316
  - IXMwrapped\_var::IXFwrap\_var, 583
- wrap\_object
  - IXMwrapped\_var, 316
  - IXMwrapped\_var::IXFwrap\_var, 583



- ws\_bridge
  - IXMbridge::IXTbridge, 589
- x
  - IXMdataset\_1d::IXTdataset\_1d, 597
  - IXMdataset\_2d::IXTdataset\_2d, 599
  - IXMdataset\_3d::IXTdataset\_3d, 600
  - IXMdataset\_nd::IXTdataset\_nd, 606
  - IXMpointer\_to\_array::IXTpointer\_to\_array, 660
- x1
  - IXMdataset\_4d::IXTdataset\_4d, 603
- x1\_distribution
  - IXMdataset\_4d::IXTdataset\_4d, 603
- x1\_units
  - IXMdataset\_4d::IXTdataset\_4d, 603
- x2
  - IXMdataset\_4d::IXTdataset\_4d, 603
- x2\_distribution
  - IXMdataset\_4d::IXTdataset\_4d, 604
- x2\_units
  - IXMdataset\_4d::IXTdataset\_4d, 603
- x3
  - IXMdataset\_4d::IXTdataset\_4d, 604
- x3\_distribution
  - IXMdataset\_4d::IXTdataset\_4d, 604
- x3\_units
  - IXMdataset\_4d::IXTdataset\_4d, 604
- x4
  - IXMdataset\_4d::IXTdataset\_4d, 604
- x4\_distribution
  - IXMdataset\_4d::IXTdataset\_4d, 604
- x4\_units
  - IXMdataset\_4d::IXTdataset\_4d, 604
- x\_distribution
  - IXMdataset\_1d::IXTdataset\_1d, 597
  - IXMdataset\_2d::IXTdataset\_2d, 599
  - IXMdataset\_3d::IXTdataset\_3d, 601
  - IXMdataset\_nd::IXTdataset\_nd, 606
- x\_geom
  - IXMsample::IXTsample, 666
- x\_hist
  - IXMdataset\_1d, 57
  - IXMdataset\_2d, 76
- x\_histogram
  - IXMdataset\_nd::IXTdataset\_nd, 606
- x\_label
  - IXMdataset\_nd::IXTdataset\_nd, 606
- x\_units
  - IXMdataset\_1d::IXTdataset\_1d, 597
  - IXMdataset\_2d::IXTdataset\_2d, 599
  - IXMdataset\_3d::IXTdataset\_3d, 601
  - IXMdataset\_nd::IXTdataset\_nd, 606
- xabs
  - IXMsample::IXTsample, 667
- xcoh
  - IXMsample::IXTsample, 667
- xhist
  - IXMtestclass::IXTtestclass, 678
- xinc
  - IXMsample::IXTsample, 667
- xmax
  - IXMmoments::IXTmoments, 641
- xmean
  - IXMmoments::IXTmoments, 641
- y
  - IXMdataset\_2d::IXTdataset\_2d, 599
  - IXMdataset\_3d::IXTdataset\_3d, 601
- y\_distribution
  - IXMdataset\_2d::IXTdataset\_2d, 599
  - IXMdataset\_3d::IXTdataset\_3d, 601
- y\_geom
  - IXMsample::IXTsample, 666
- y\_hist
  - IXMdataset\_2d, 76
- y\_units
  - IXMdataset\_2d::IXTdataset\_2d, 599
  - IXMdataset\_3d::IXTdataset\_3d, 601
- z
  - IXMdataset\_3d::IXTdataset\_3d, 601
- z\_distribution
  - IXMdataset\_3d::IXTdataset\_3d, 601
- z\_units
  - IXMdataset\_3d::IXTdataset\_3d, 601