Athena++ Objects

TimeIntegratorTaskList
IntegratorWeight step_wghts[MAX_NSTEP]

TaskList
Mesh *pmy_mesh_

Task

IntegratorWeight

MeshBlockTree
LogicalLocation loc
MeshBlockTree
    *pparent,
    *pleaf[2][2][2]

Mesh
LogicalLocation *loclist
MeshBlock *pblock
MeshBlockTree *tree
RegionSize mesh_size

NeighborBlock

PolarNeighborBlock

RegionSize

LogicalLocation

BoundaryValues
MeshBlock *pmy_block
NeighborIndexes ni[56]

NeighborIndexes

MeshBlock
BoundaryValues *pbval
Coordinates *pcoord
EquationOfState *peos
Field *pfield
Hydro *phydro
LogicalLocation loc
Mesh *pmy_mesh
MeshBlock *prev, *next
MeshRefinement *pmr
NeighborBlock neighbor[56]
PolarNeighborBlock
    *polar_neighbor_north,
    *polar_neighbor_south
Reconstruction *precon
RegionSize block_size

Reconstruction
MeshBlock *pmy_block

EquationOfState
MeshBlock *pmy_block

Coordinates
MeshBlock *pmy_block

Cartesian

Cylindrical

SphericalPolar

Minkowski

Schwarzschild

KerrSchild

GRUser

MeshRefinement
Coordinates *pcoarsec
FaceField coarse_b_
MeshBlock *pmy_block

FaceField

EdgeField

ParameterInput
InputBlock *pfirst_block

InputBlock
InputLine *pline
InputBlock *pnext

IOWrapper

InputLine
InputLine *pnext

Hydro
HydroSourceTerms *psrc
MeshBlock *pmy_block

Field
EdgeField e
FaceField b, b1, ei, wght
MeshBlock *pmy_block

HydroSourceTerms
Hydro *pmy_hydro_

Outputs
OutputType *pfirst_type_

OutputType
OutputData
    *pfirst_data_,
    *plast_data_
OutputParameters
    output_params
OutputType *pnext_type

OutputParameters

OutputData
OutputData *pnext, *pprev

HistoryOutput

FormattedTableOutput

VTKOutput

ATHDF5Output

RestartOutput

Internal   A contains single instance of B   A → B   linked list   public declaration

Physics   A contains multiple instances of B   A — B   doubly linked list   protected/private declaration

I/O   B is derived from A   A ⇢ B   tree   (AthenaArray excluded)