

Exodus Analysis Interface Module (AIM)

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0.1 Introduction

0.1.1 Exodus AIM Overview

This module can be used to interface with the open-source Exodus file format developed at Sandia National Laboratories. For Exodus capabilities and related documentation, please refer to <https://github.com/sandialabs>.

An outline of the AIM's inputs and outputs are provided in [AIM Inputs](#) and [AIM Outputs](#), respectively.

0.1.1.1 Automatic generation of Exodus Exodus Mesh file

The mesh file from Exodus AIM is written in native Exodus format ("filename.exo"). The description of the native Exodus mesh can be found Exodus website (<https://sandialabs.github.io/seacas-docs/html/index.html>). For the automatic generation of mesh file, Exodus AIM depends on Mesh AIMS, for example, TetGen or AFLR4/3 AIM.

0.2 AIM Inputs

- **Proj_Name = "exodus_CAPS"**
This corresponds to the project name used for file naming.
- **SolutionFile = NULL**
Exodus solution file for generating ScalarFieldSolbFile
- **OutputScalarField = NULL**
Scalar field quantity for the ScalarFieldSolbFile output.
- **OutputTensorField = NULL**
Tensor field quantity for the MetricFieldSolbFile output.
- **RestartFile = NULL**
Restart file for spinnaker. A libMeshb file will be converted to exodus.
- **Mesh_Morph = False**
Project previous surface mesh onto new geometry and write out a 'Proj_Name'_body#.dat file.
- **Mesh = NULL**
An Area_Mesh or Volume_Mesh link for 2D and 3D calculations respectively.

0.3 AIM Outputs

Exodus outputs

- **ScalarFieldSolbFile**
String to file containing a scalar field in libMeshb solb format
- **MetricFieldSolbFile**
String to file containing a metric field in libMeshb solb format
- **RestartSolbFile**
String to file containing all exodus variables in libMeshb solb format

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