

Lab 1: Visualization

Goals

Lab1

Dataset Creation

Visualization

Clipping

More Visualization

What You Need To Know....

Lab1

Dataflow

- Making / saving / loading a network
- Creating and connecting modules
- Execution model
- User interfaces

Categories

Visualization Pipeline

- Generate geometry
 - Isosurface, FieldBoundary, Streamlines
- Define data values on geometry
 - ManageFieldData, TransformFieldData, DirectMapping, ApplyMappingMatrix
- Choose colors and shapes for rendering
 - GenStandardColorMap, RescaleColorMap
 - ShowField: nodes/edges/faces, scalar/vector/tensor

Viewer

- See User Guide Tutorial

Instructions

Lab1

Dataset Creation

- 3D Volume (`SCIRun::FieldsCreate::SampleLattice`)
- Assign data values (`SCIRun::FieldsData::TransformFieldData`)

Visualization

- Bounding box (`SCIRun::FieldsOther::FieldCage`)
- Isosurface (`SCIRun::Visualization::Isosurface`)
- Slice (`SCIRun::FieldsCreate::FieldSlicer`, `SCIRun::Visualization::ShowField`)

Clipping

- Turn into Hex Mesh (`SCIRun::FieldsGeometry::Unstructure`)
- Clip to some function (`SCIRun::FieldsCreate::ClipByFunction`)

More Visualization

- FieldBoundary (`SCIRun::FieldsCreate::FieldBoundary`)
- Extra credit:
 - Look at a slice in 'z' (`TransformFieldData ('v=z;')`, `Isosurface`, `ManageFieldData`, `ShowField`, `GenStandardColorMap`, `RescaleColorMap`)
 - Make a movie
 - ...