

Medical Data
Acquisition
Multimodal Scanning

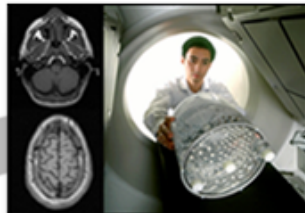
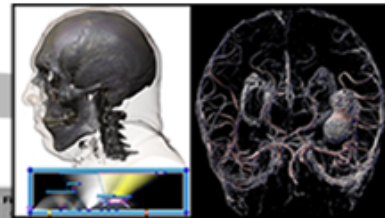
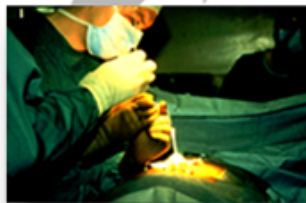


Image
Rendering
Surface Imaging
Volume Rendering

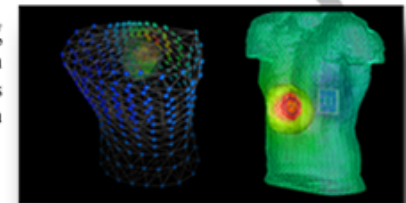


Integrated Software Environment

Intervention
Real-time Data for
Operating Room



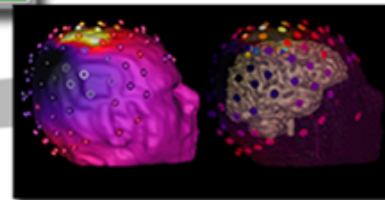
Modeling
Segmentation
Finite Elements
Registration



Data
Interpretation
Virtual Reality
Error Analysis



Simulation
Inverse problems
Source Localization



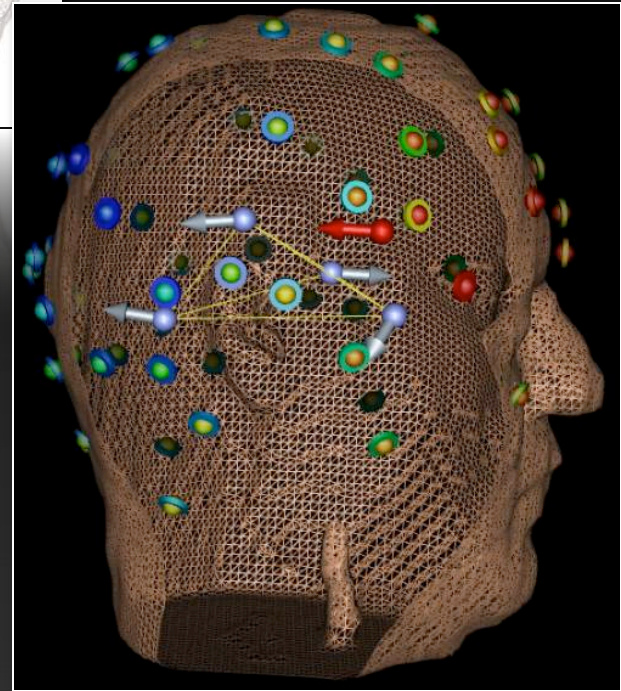
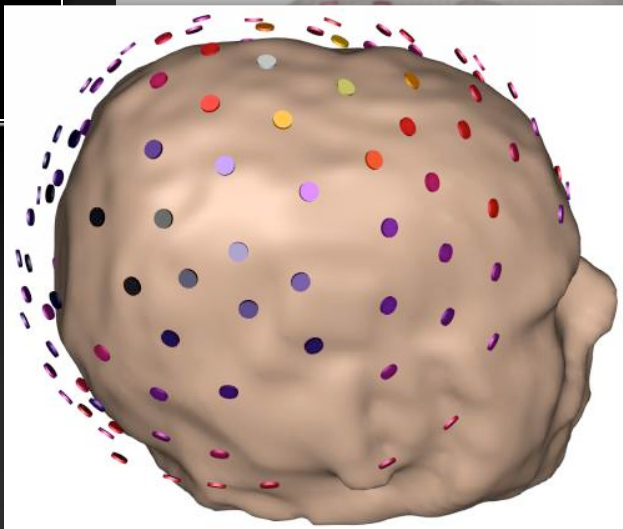
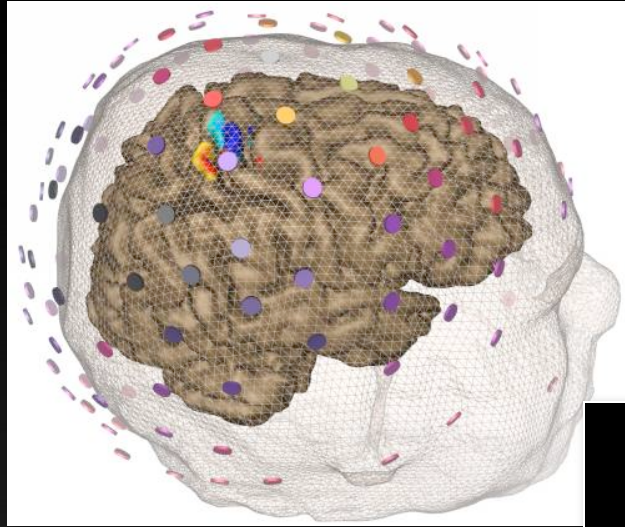
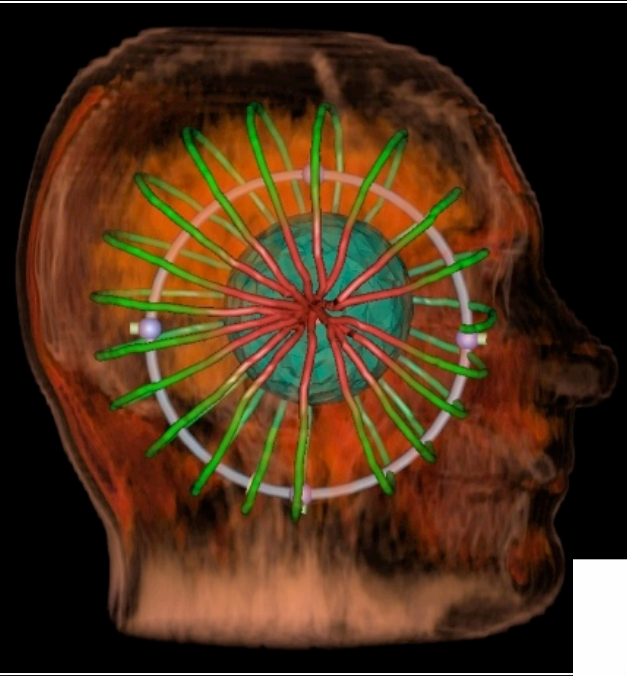
Data
Interpretation
Virtual Reality
Error Analysis



Simulation
Inverse problems
Source Localization

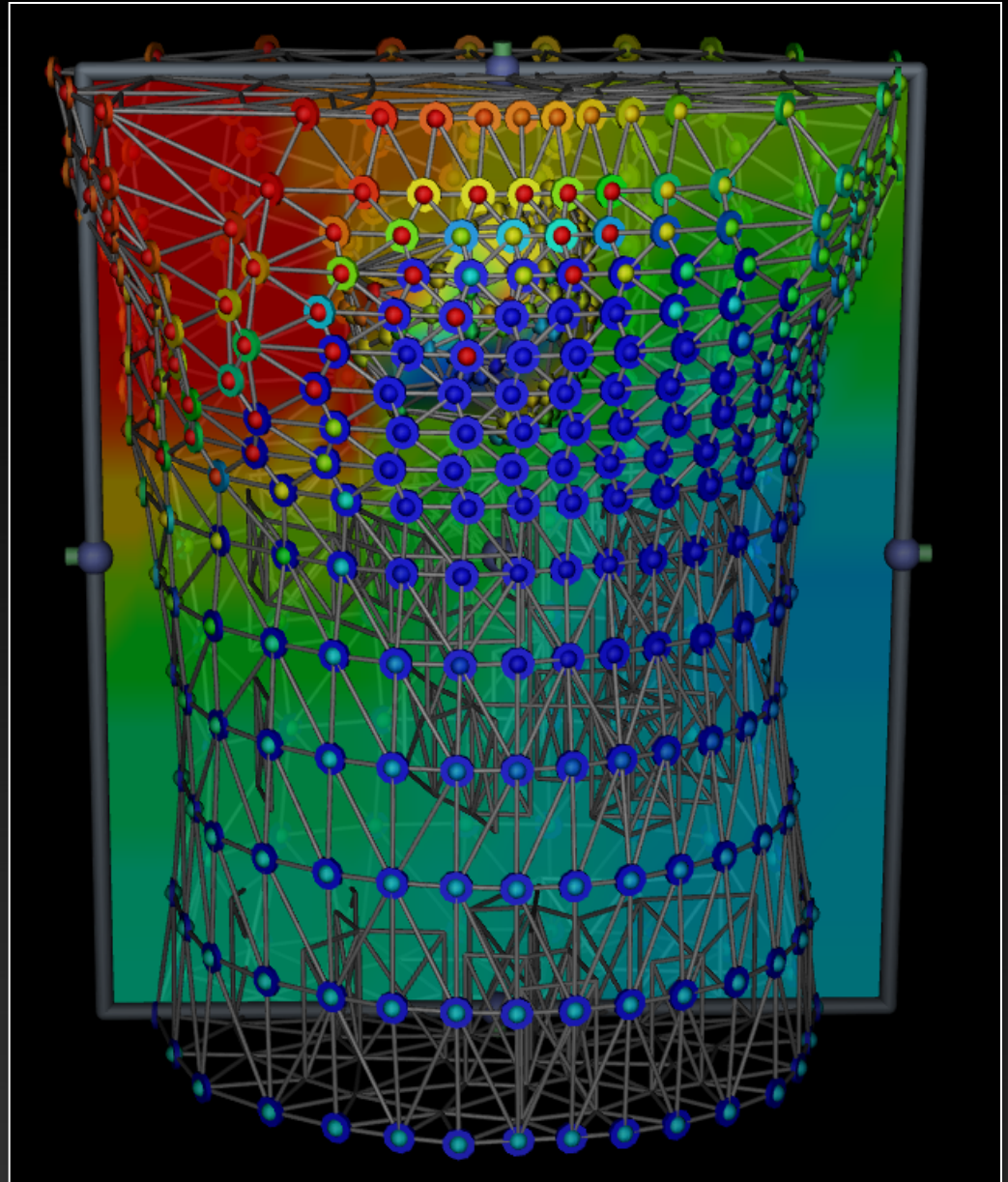


Forward and Inverse EEG

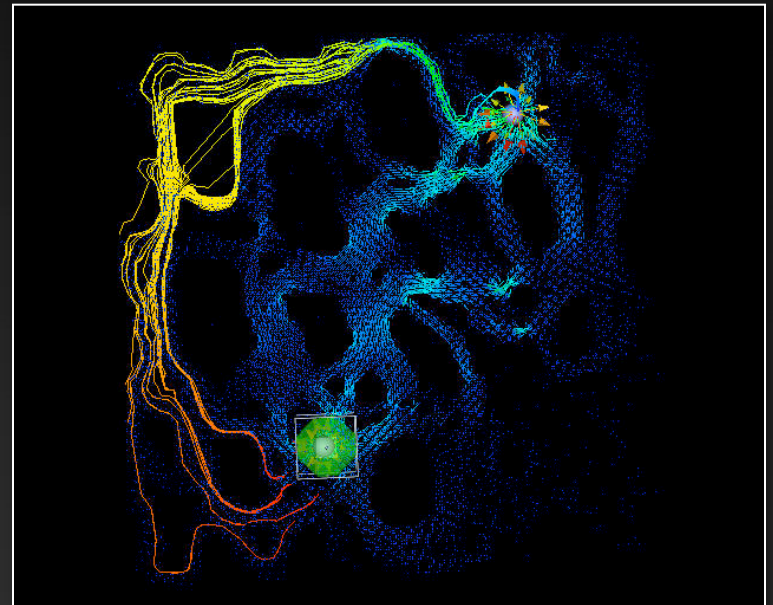
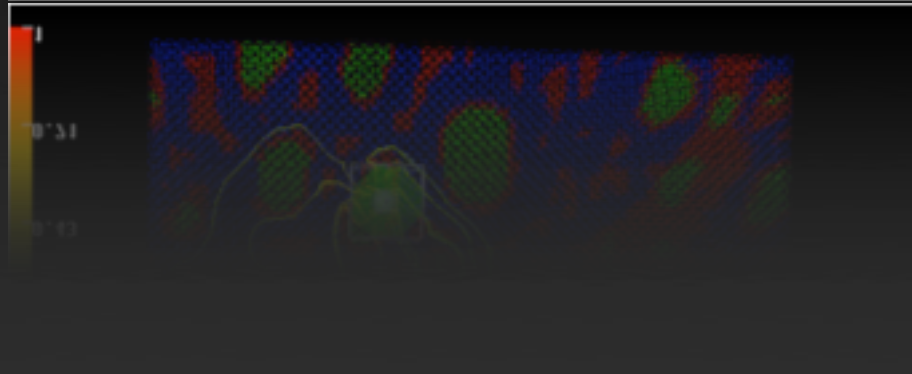
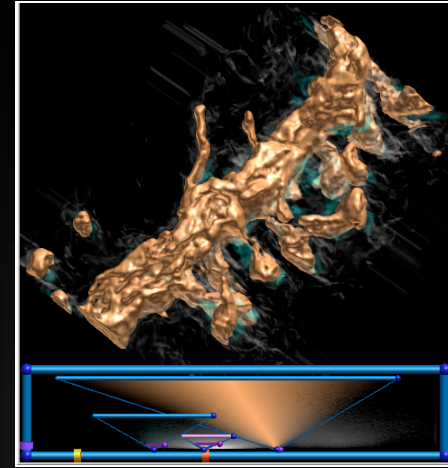
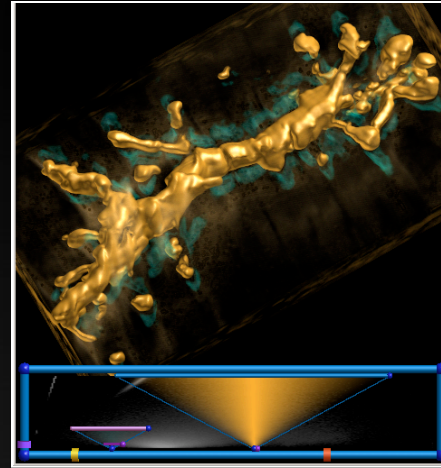
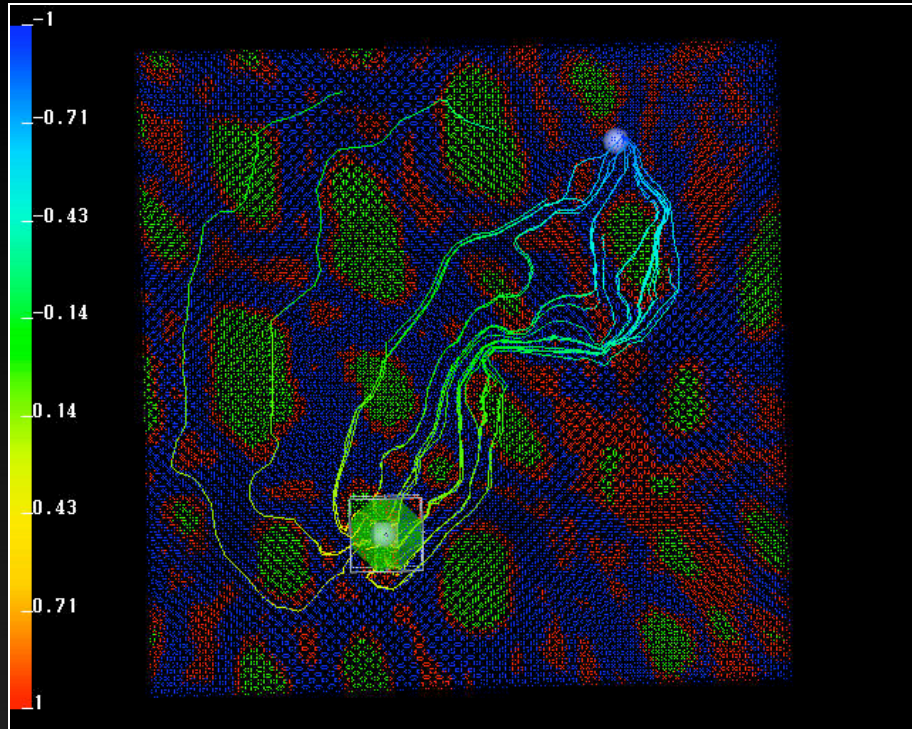


Electrocardiography

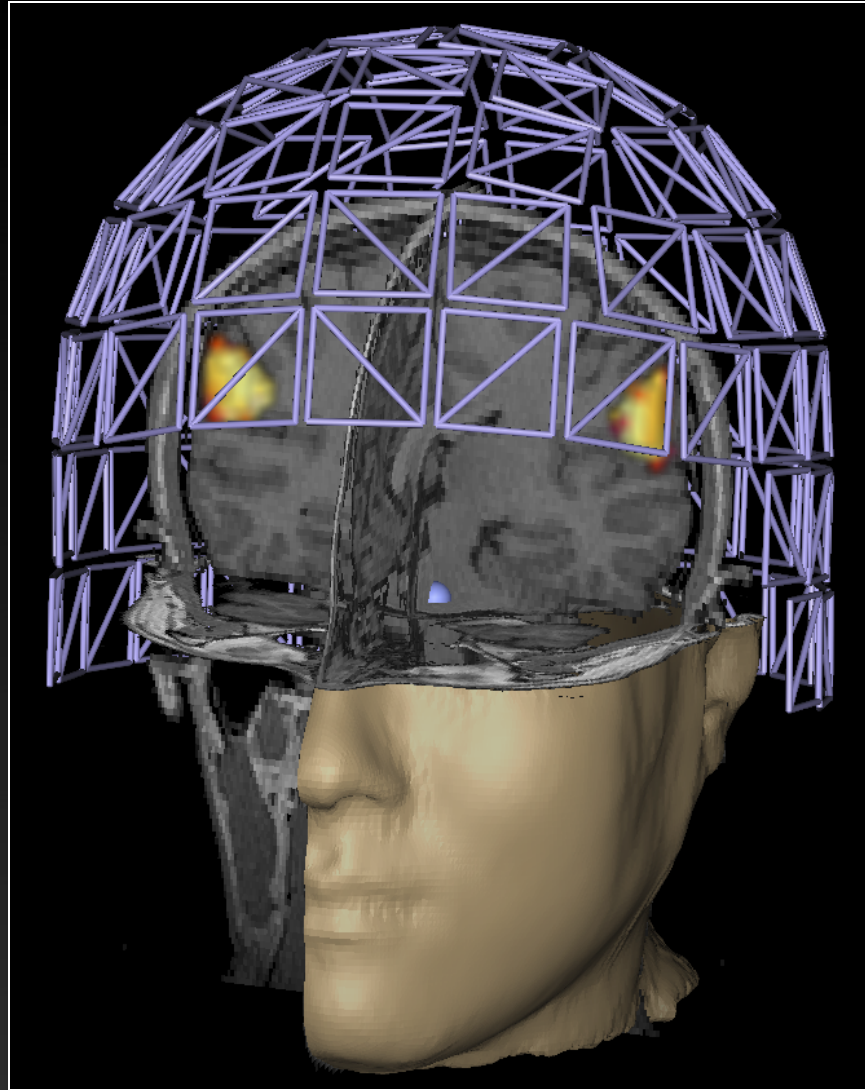
Torso Tank
in BioPSE



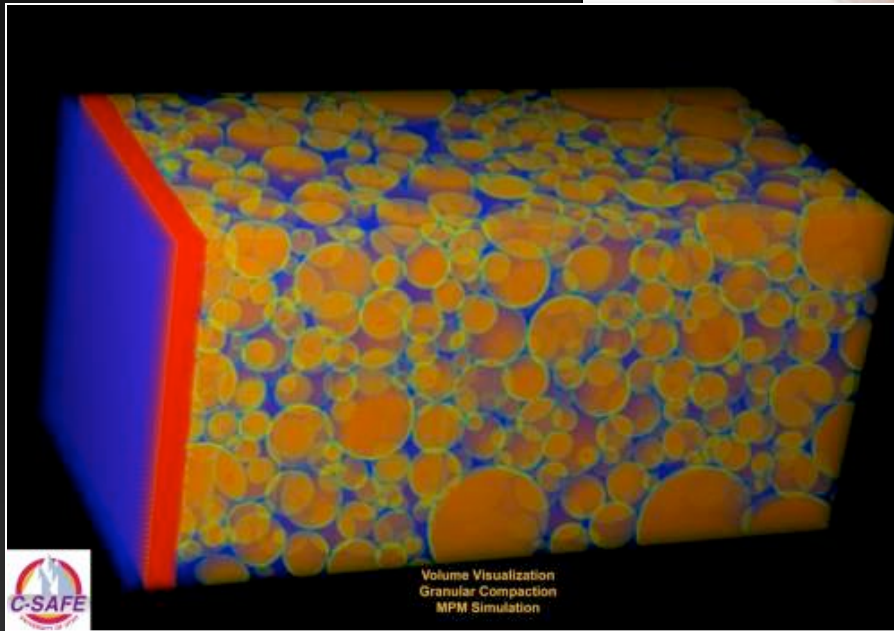
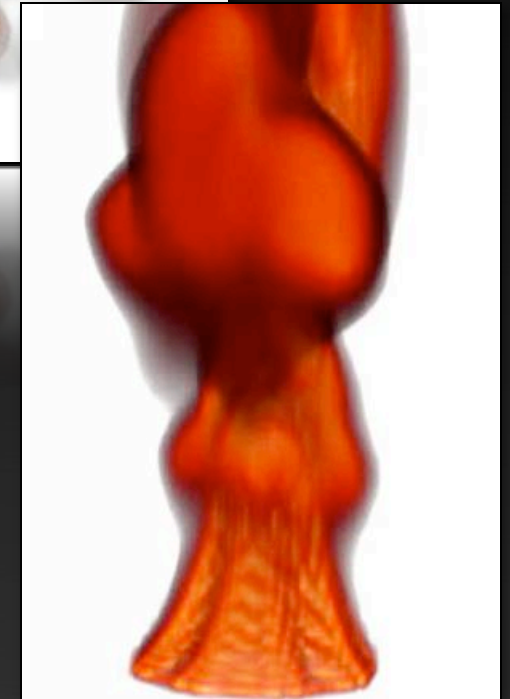
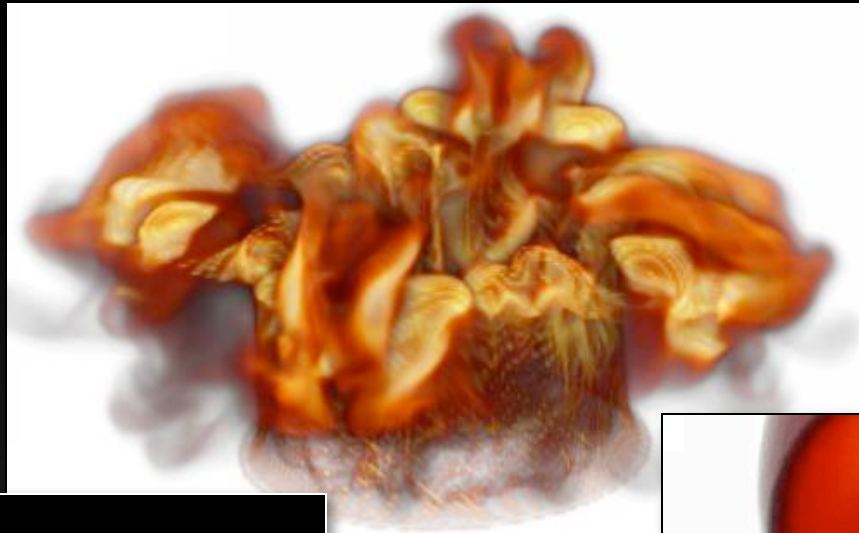
Neural Modeling and Visualization



Magnetoencephalography

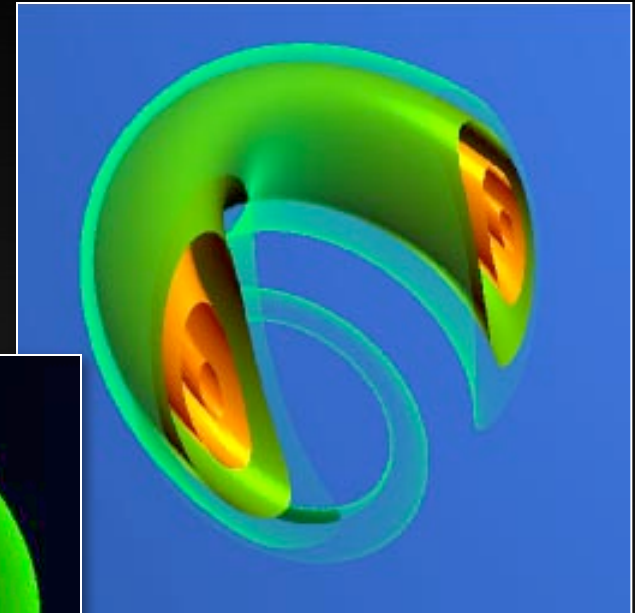
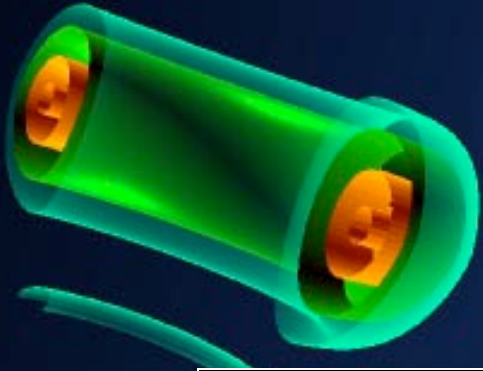


CSAFE: Fire-spread

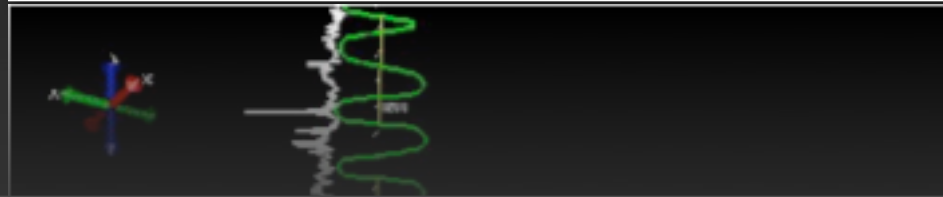
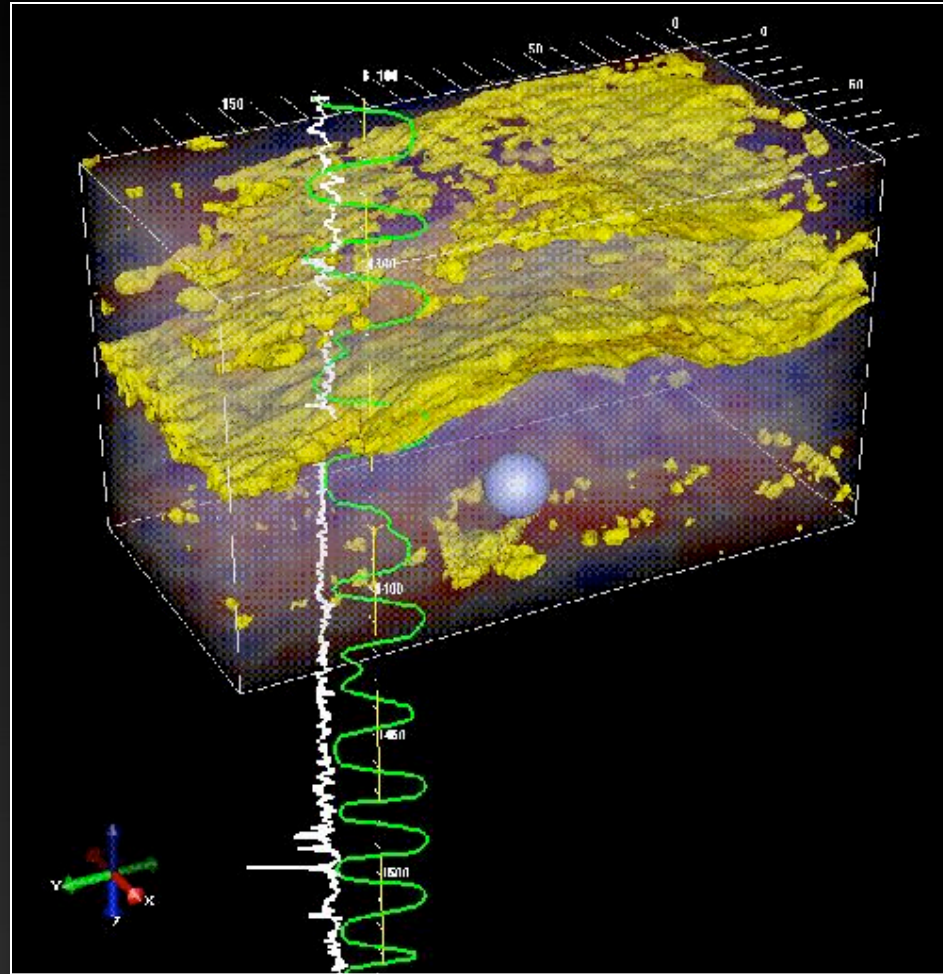


Визуализация
объема, сжатия
гранулярного материала

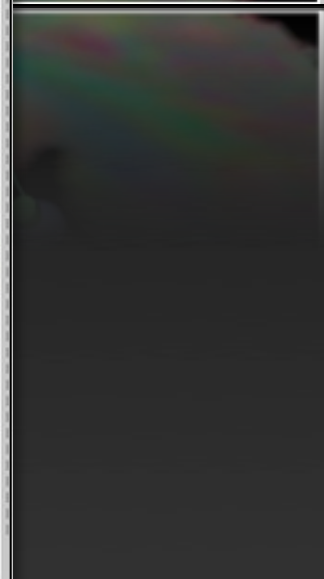
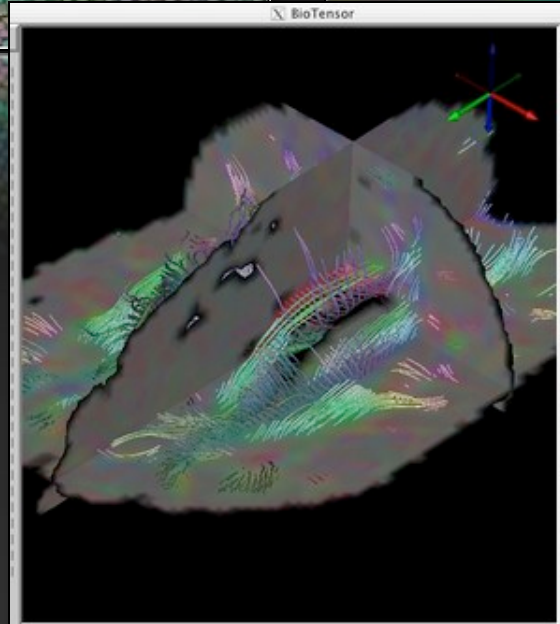
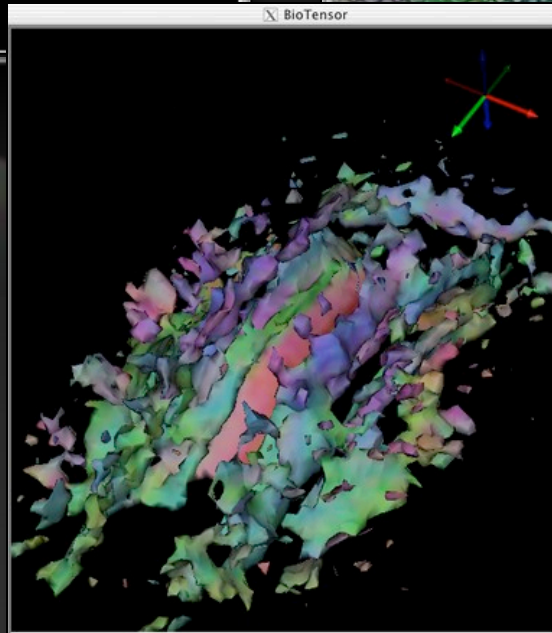
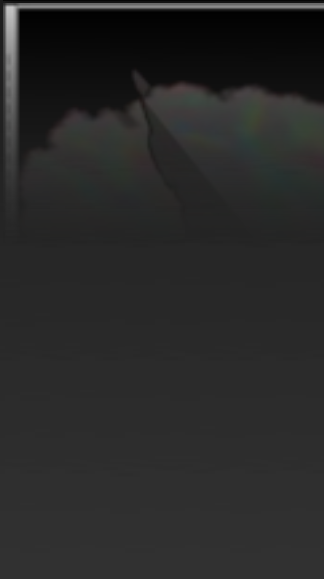
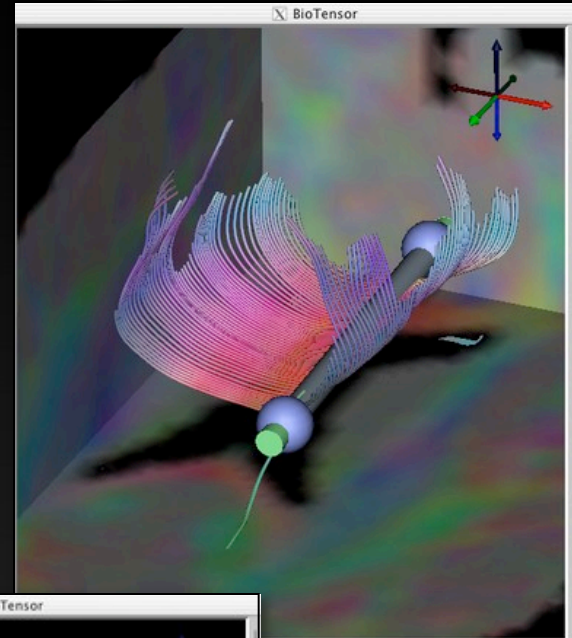
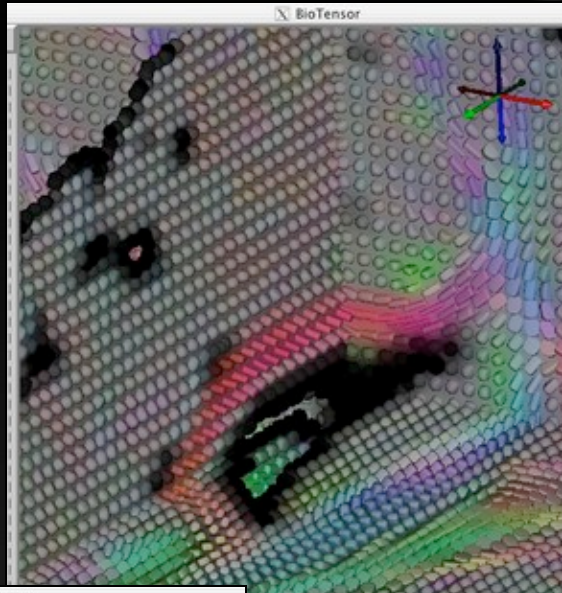
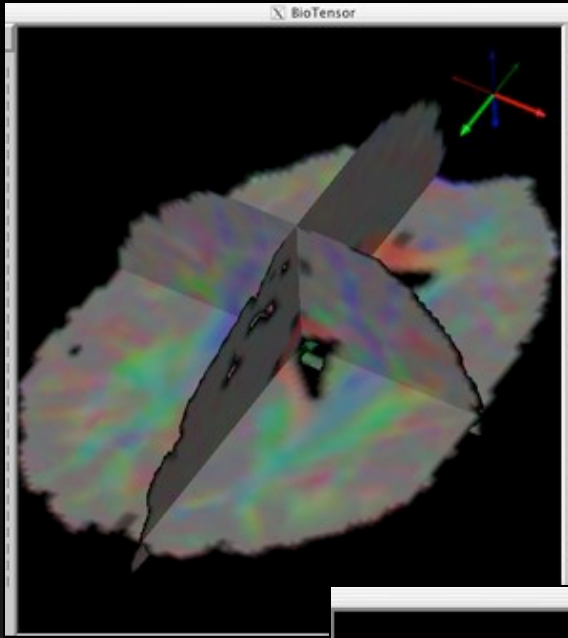
Nuclear Fusion: Tokamak



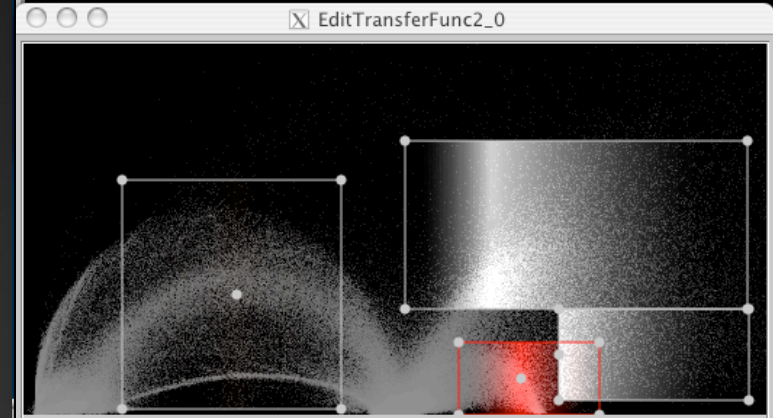
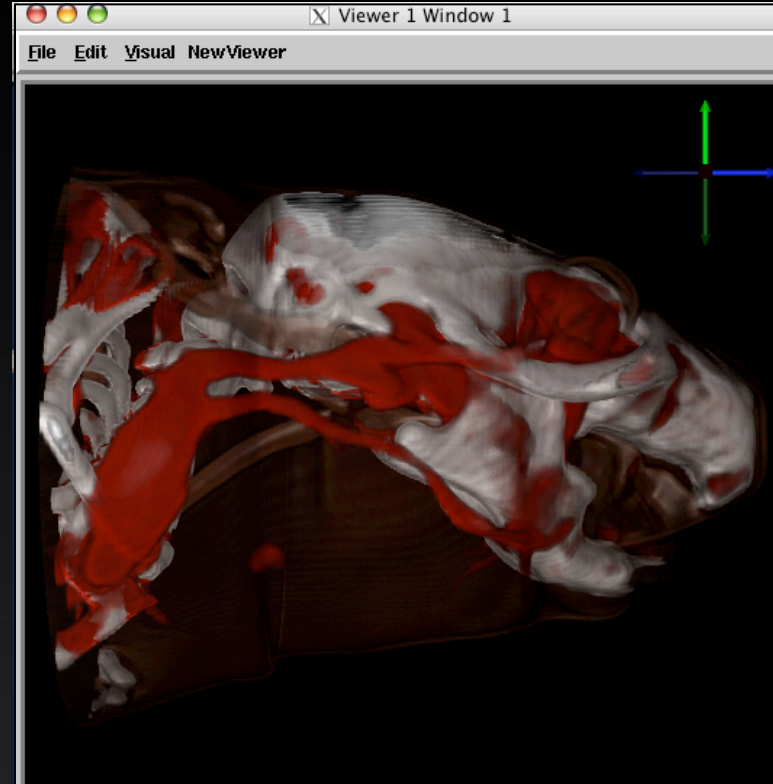
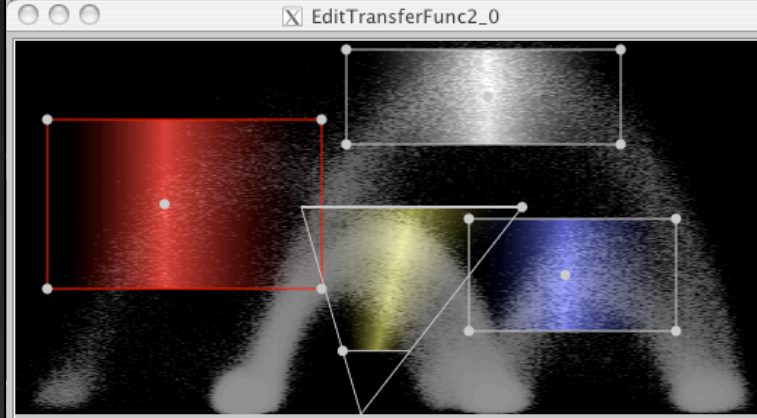
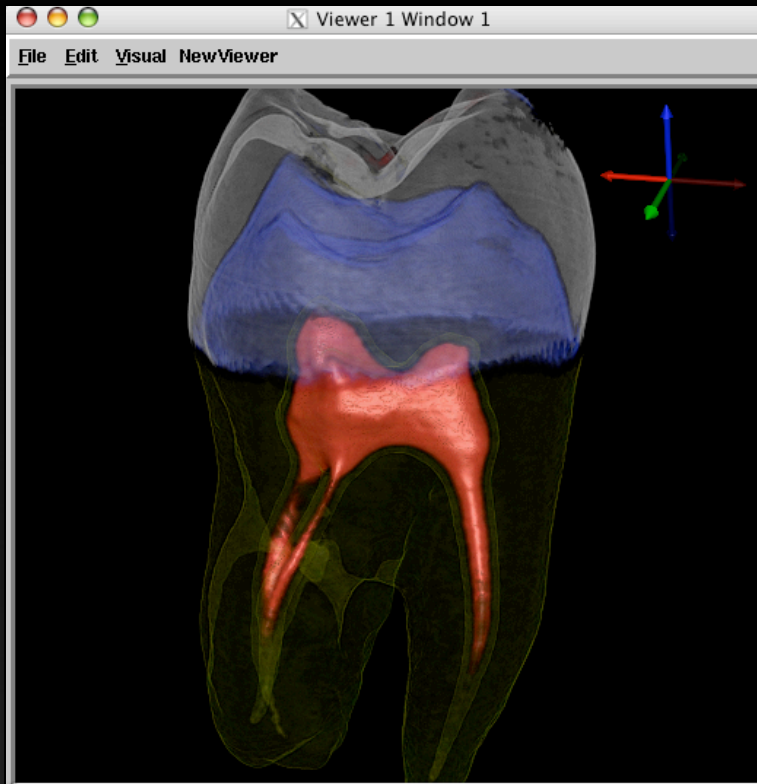
Seismic Data Visualization



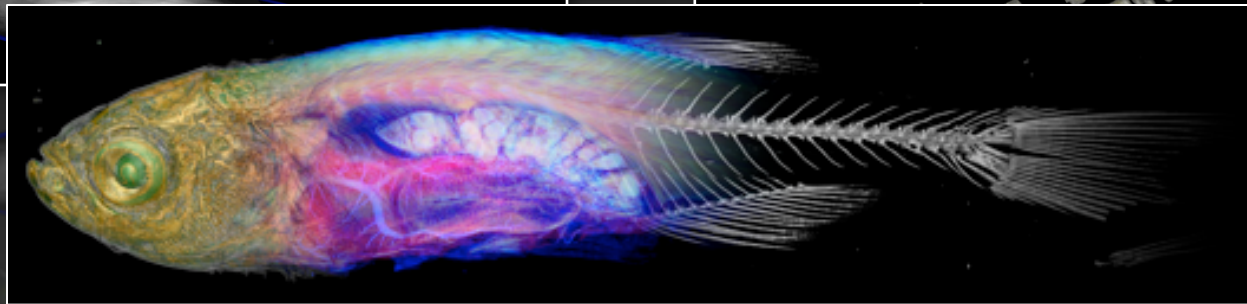
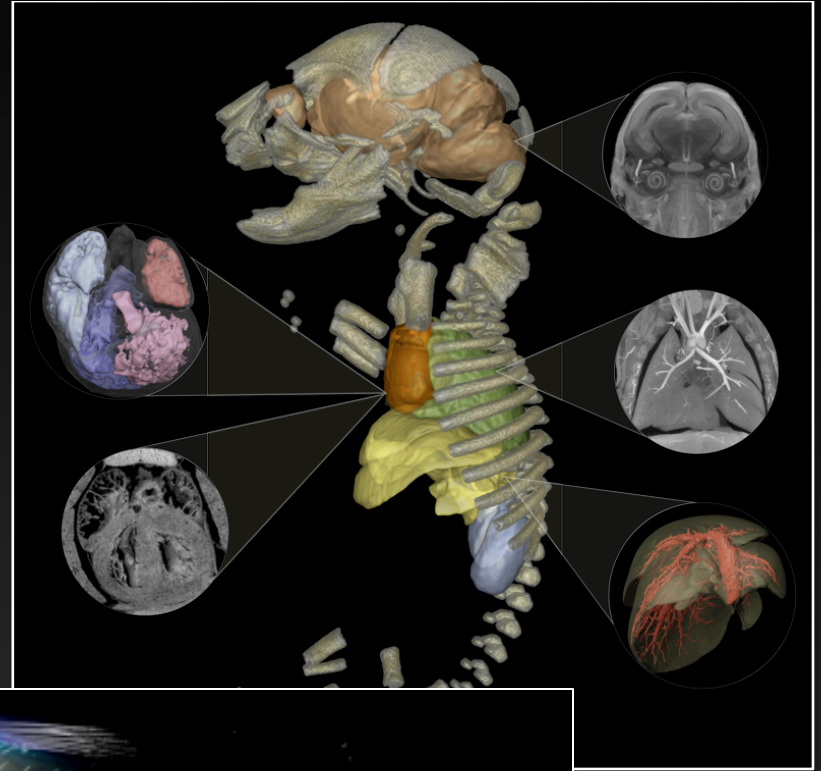
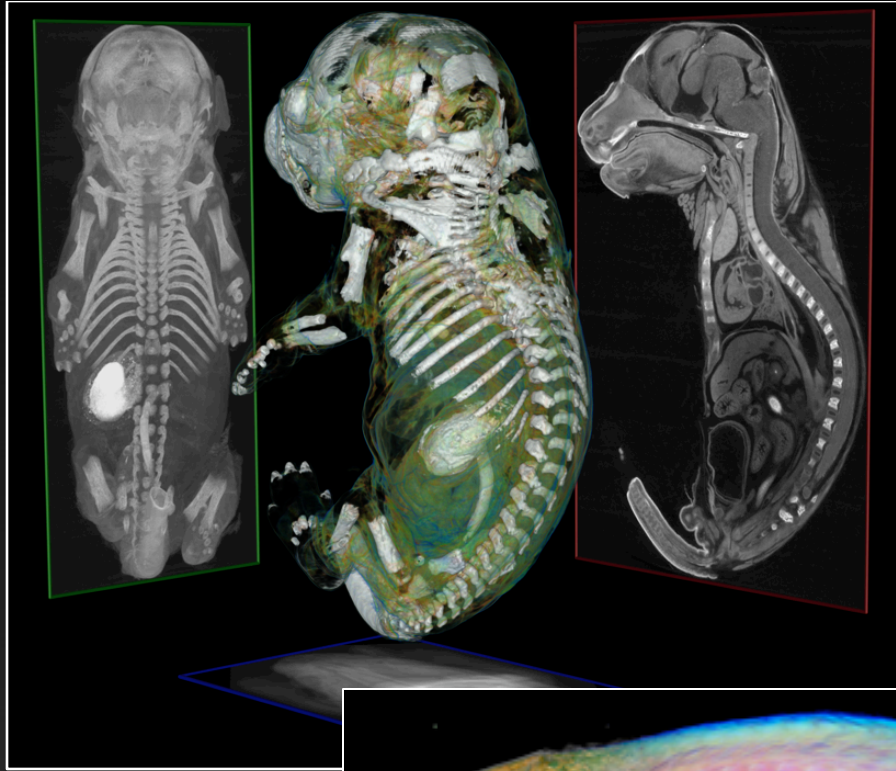
Diffusion Tensor Imaging



Medical Volume Rendering



Numira Biosciences



Elements of SCIRun

Visual programming Environment

The image displays the SCIRun (BioFEM-ch6.srn) visual programming environment. The main window shows a complex workflow graph with various modules connected by colored lines (yellow, blue, purple). The modules include:

- ReadField (UI: 0.26, 0.11, 0.13)
- BuildFEMatrix (UI: 1.98)
- ApplyFEMCurrentSource (UI: 0.82)
- SolveLinearSystem (UI: 2.22)
- SwapFieldDataWithMatrixEntries (UI: 2.27)
- CalculateGradients (2.59)
- GeneratePointSamplesFromFieldOrWidget (UI: 0.06)
- GenerateStreamLines (UI: 0.29)
- MapFieldDataFromSourceToDestination (UI: 2.33, 0.38)
- CreateStandardColorMaps (UI: 0.09)
- GetFieldBoundary (1.81)
- RescaleColorMap (UI: 2.32)
- ShowField (UI: 1.70, 0.00, 0.00)
- ExtractIsosurface (UI: 0.14)
- ViewScene (VIEW)

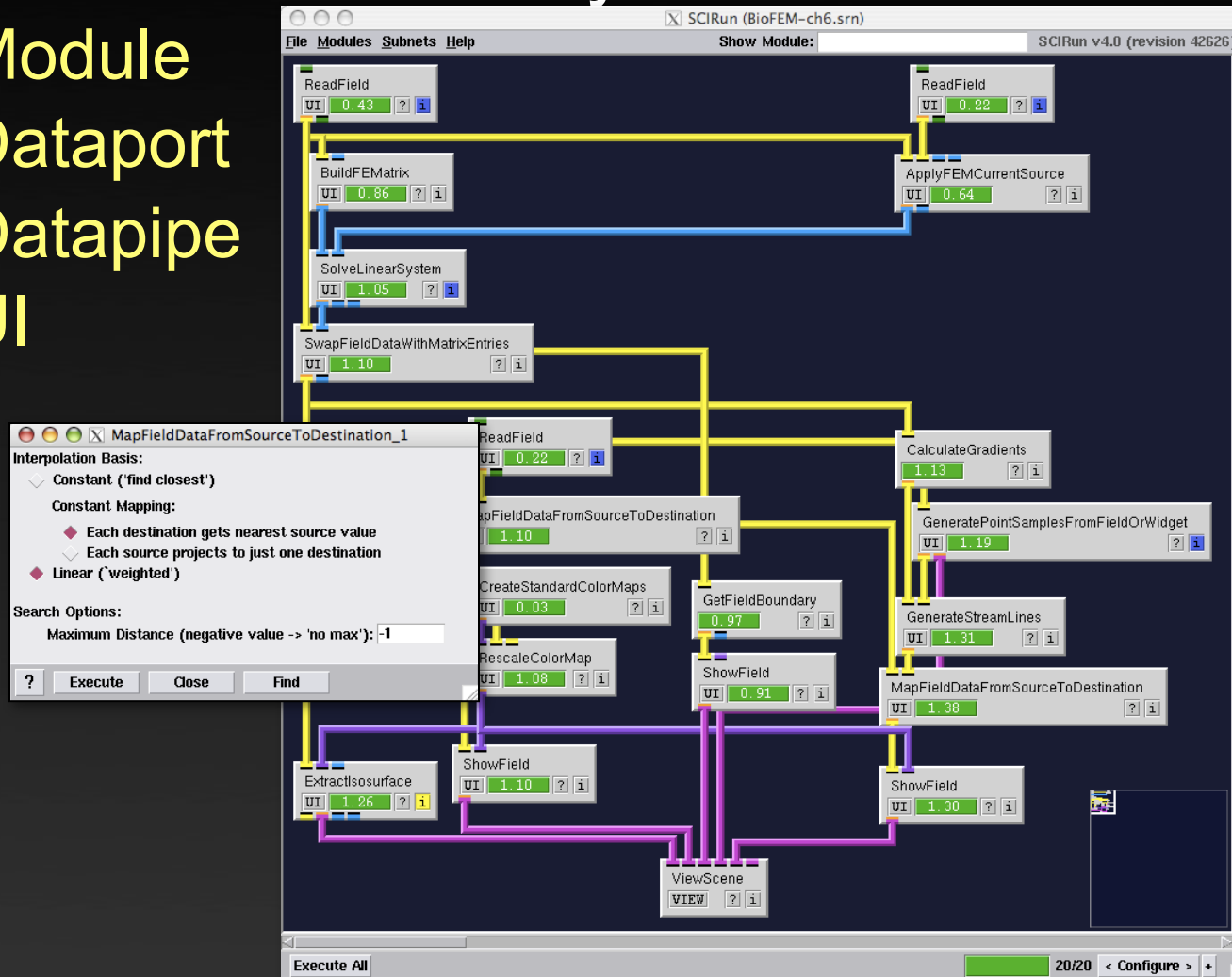
The right window, titled "ViewScene 1 Window 1", displays a 3D visualization of a brain model. The model is rendered as a wireframe mesh with a semi-transparent surface. A central gray rod-like structure is visible, surrounded by colorful streamlines (yellow, red, green, blue) representing field data. The interface includes a menu bar (File, Views, Help) and a toolbar with buttons: NewWindow, Autoview, Go Home, Set Home, LockView, and a Configure dropdown.

At the bottom of the main window, there is an "Execute All" button and a progress indicator showing "20/20" with a "Configure" dropdown.

Network Elements

- Dataflow Vocabulary

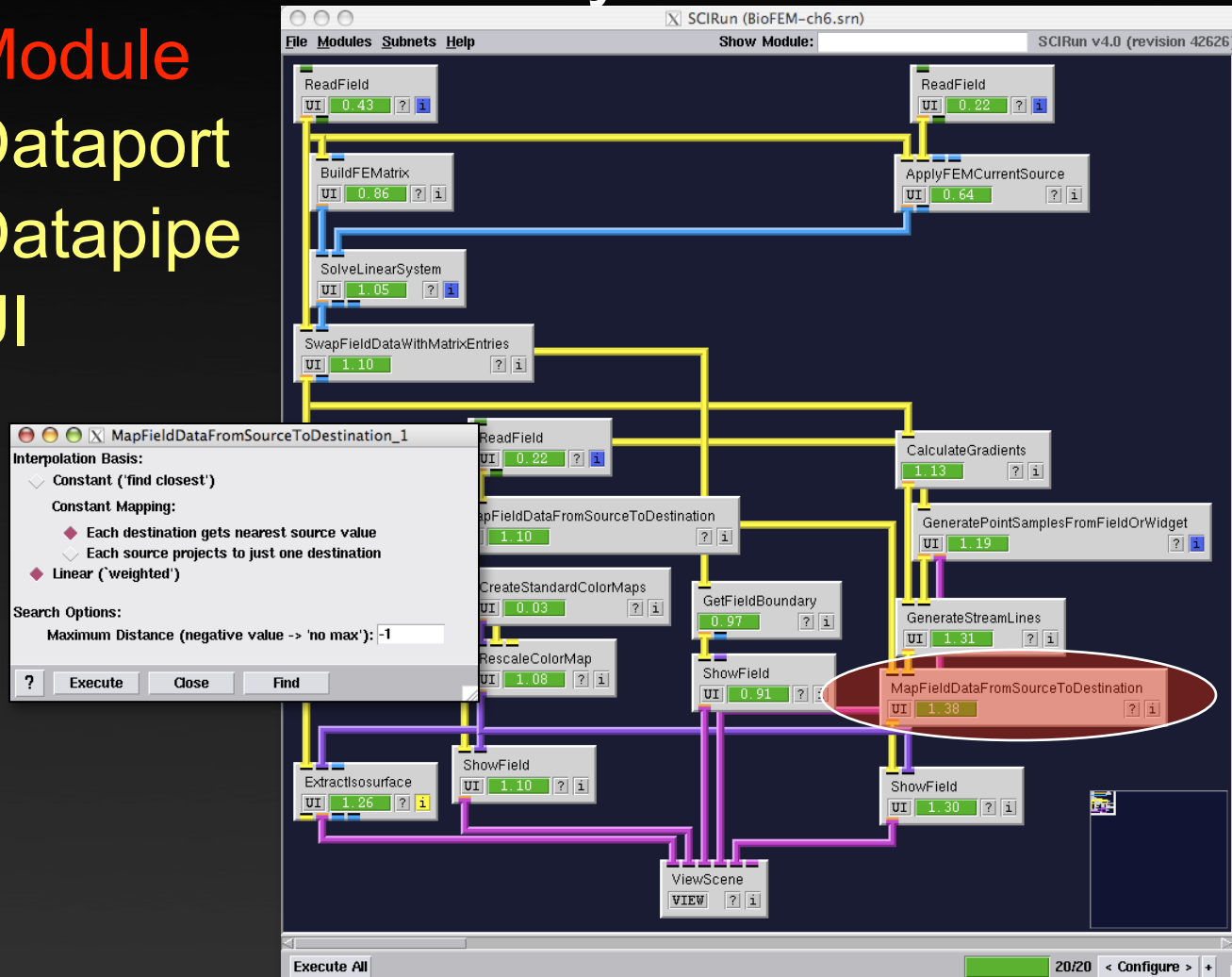
- Module
- Dataport
- Datapipe
- UI



Network Elements

- Dataflow Vocabulary

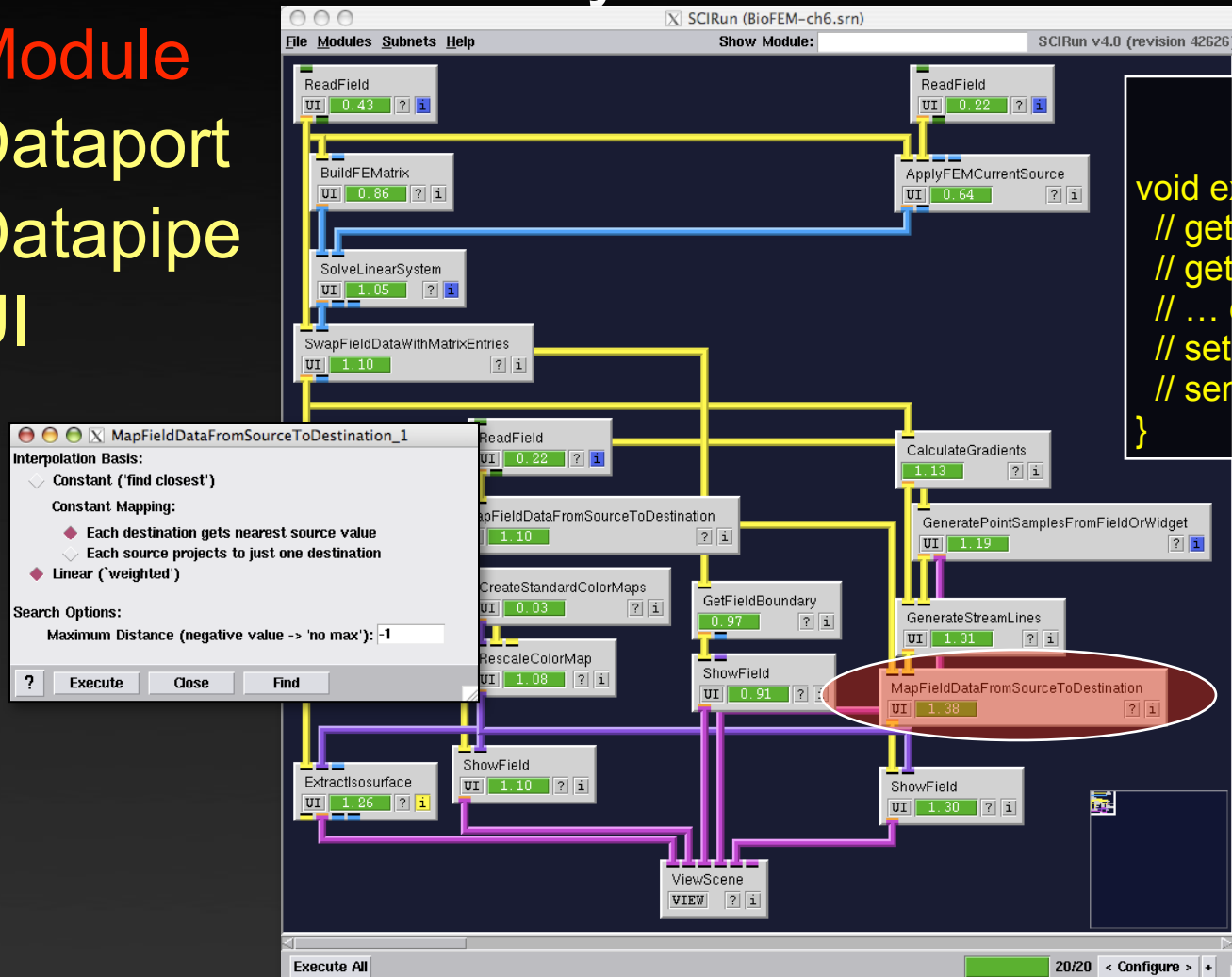
- **Module**
- Dataport
- Datapipe
- UI



Network Elements

- Dataflow Vocabulary

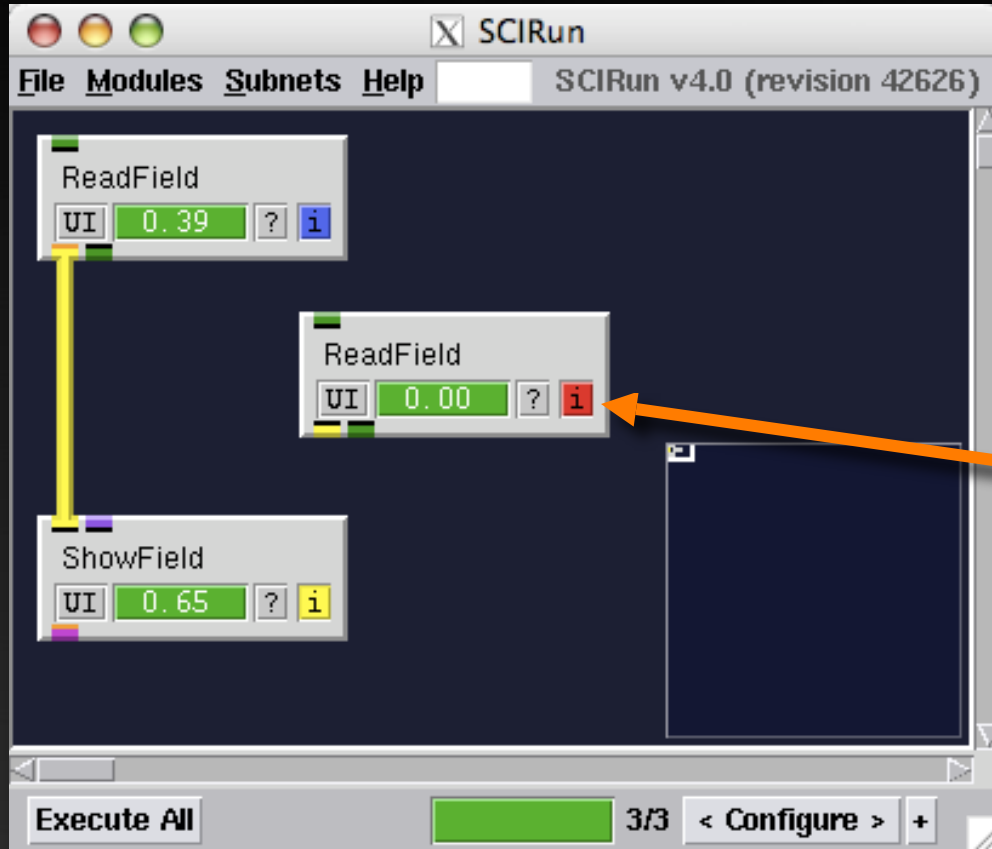
- Module
- Dataport
- Datapipe
- UI



MODULE

```
void execute() {  
    // get data from ports  
    // get data from UI  
    // ... do work ...  
    // set data on UI  
    // send data out ports  
}
```


Module Status



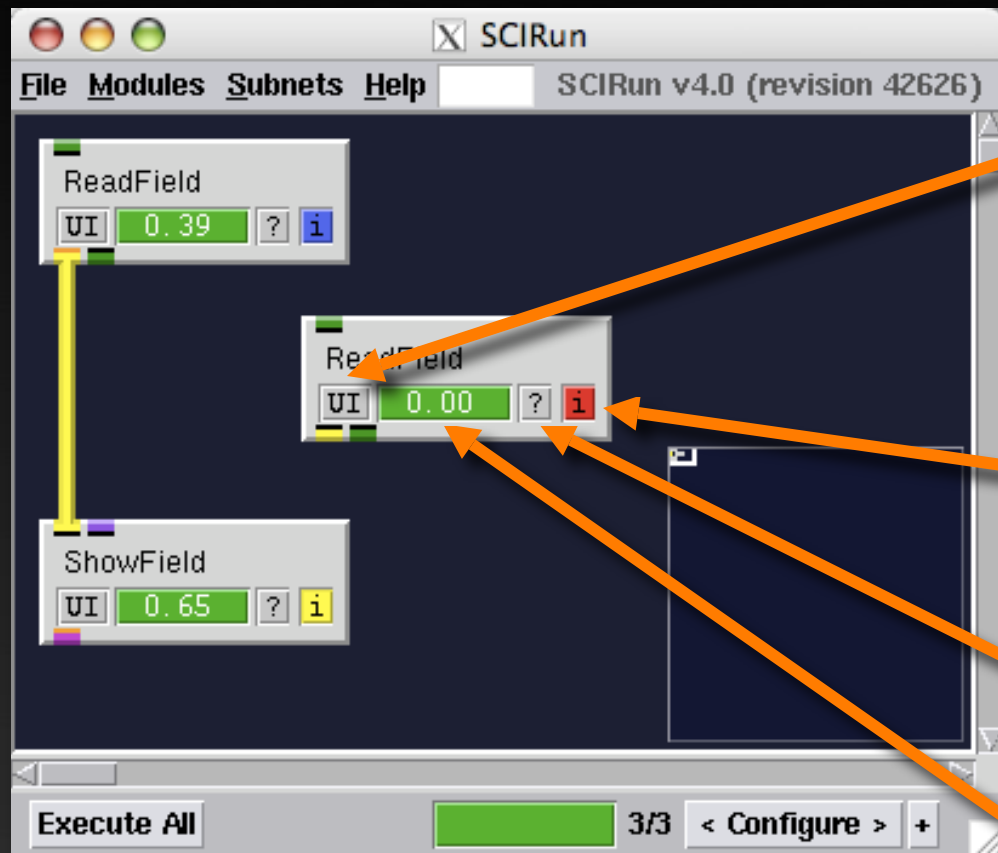
Log message indicator

Gray: no messages

Red: error

Blue: warning/remark

Module Status



Open module's GUI window

Log message indicator

Gray: no messages

Red: error

Blue: warning/remark

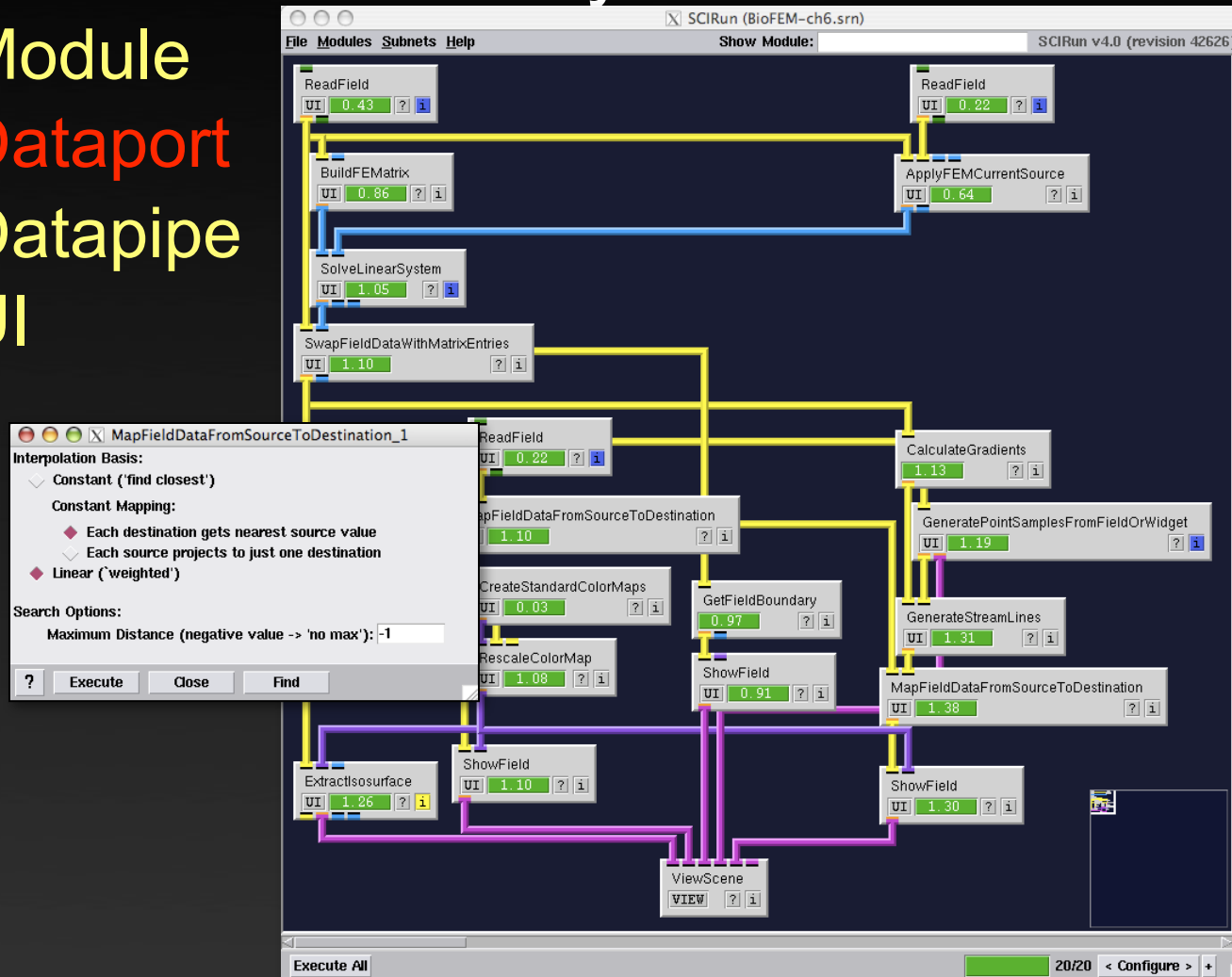
Press '?' button for Module help

Progress bar

Network Elements

- Dataflow Vocabulary

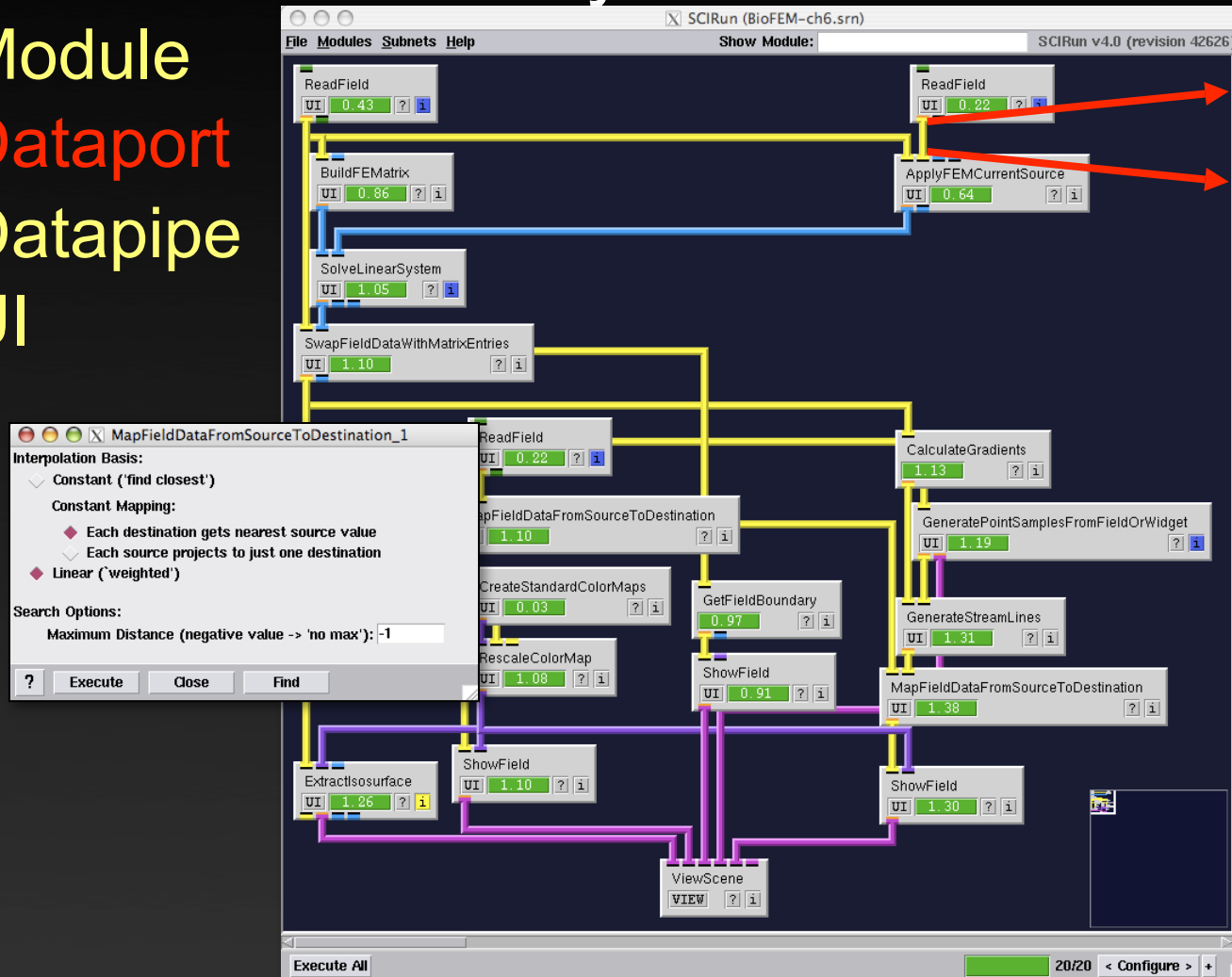
- Module
- Dataport
- Datapipe
- UI



Network Elements

- Dataflow Vocabulary

- Module
- Dataport
- Datapipe
- UI

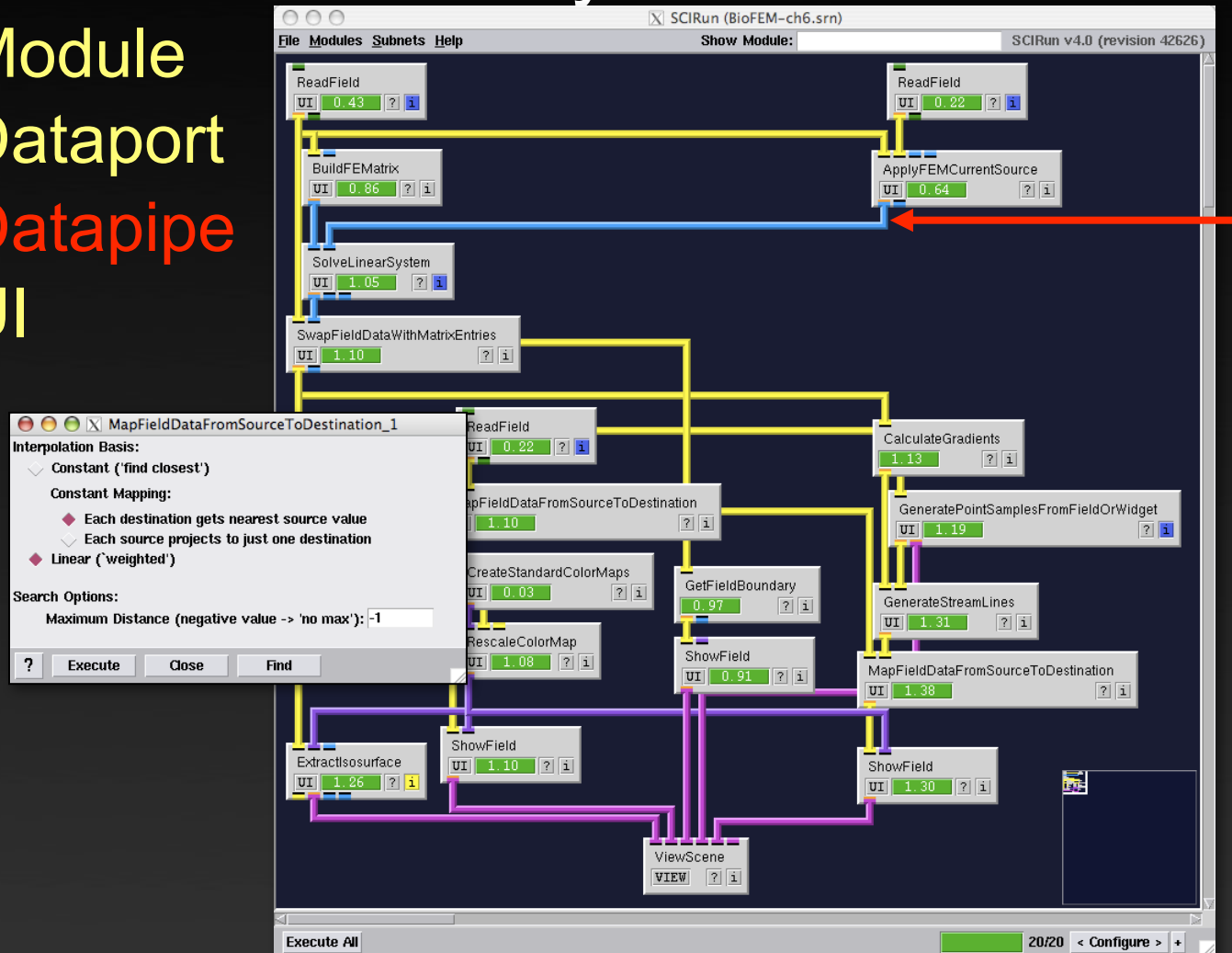


.....send
get.....

Network Elements

- Dataflow Vocabulary

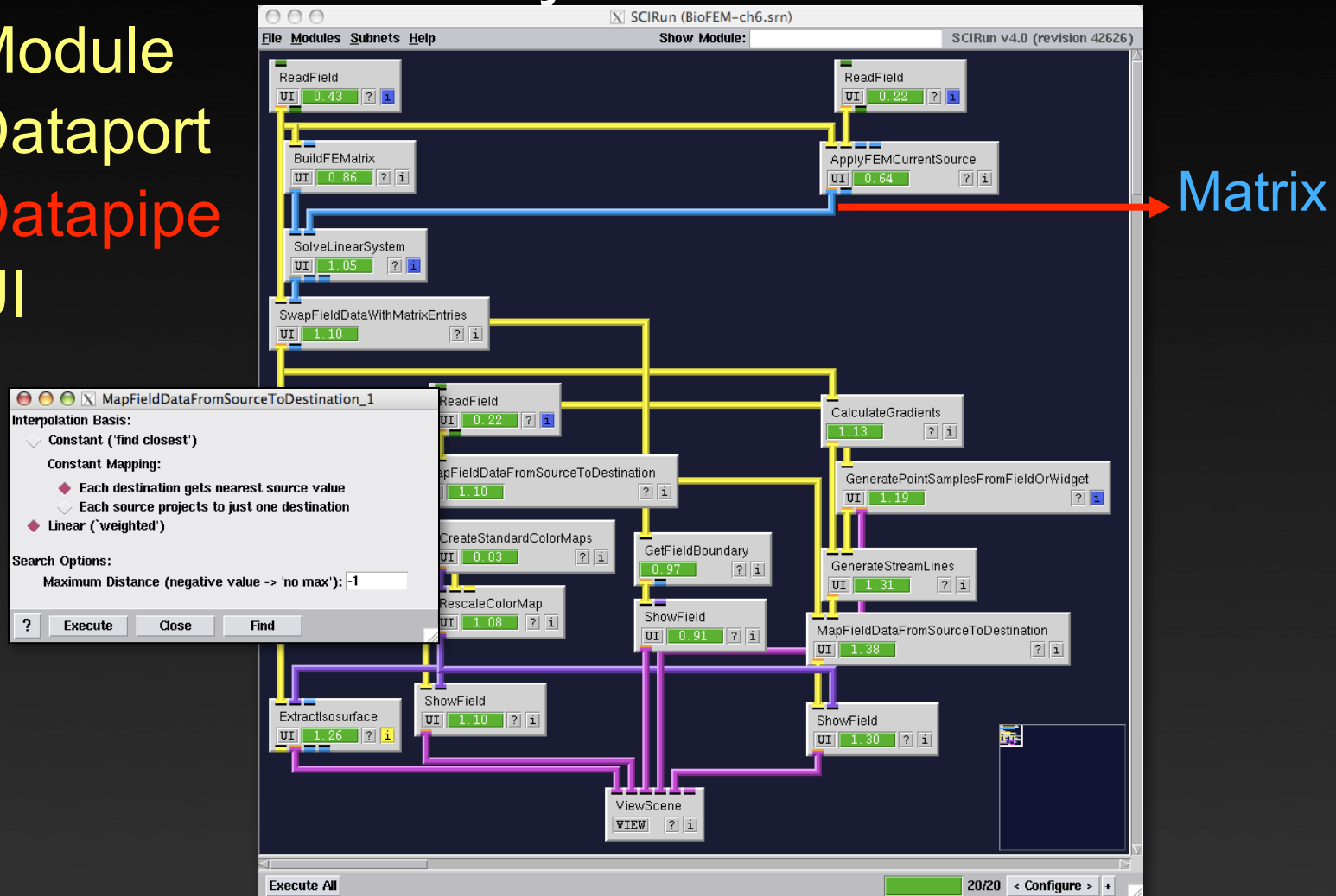
- Module
- Dataport
- Datapipe
- UI



Network Elements

- Dataflow Vocabulary

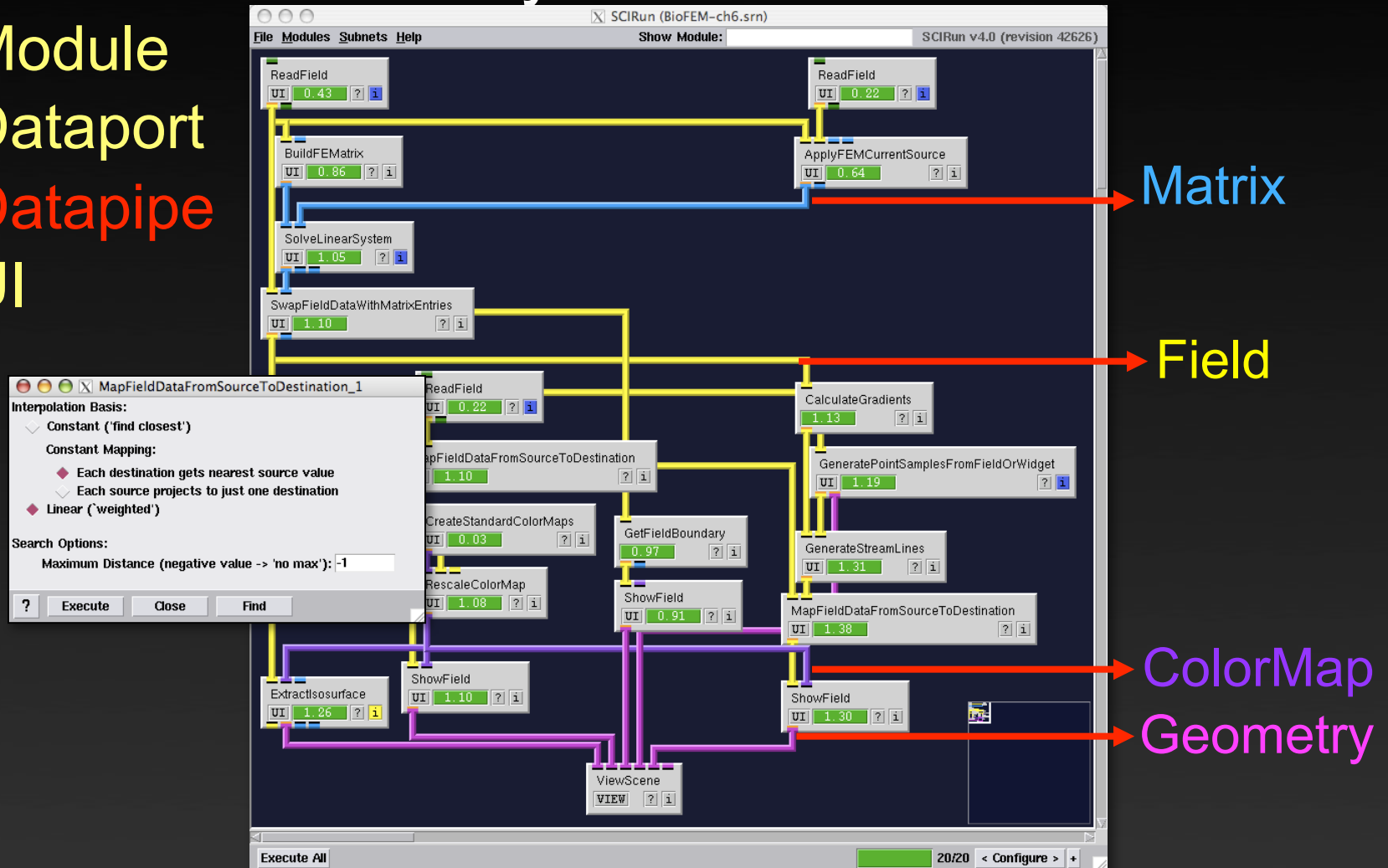
- Module
- Dataport
- Datapipe
- UI



Network Elements

- Dataflow Vocabulary

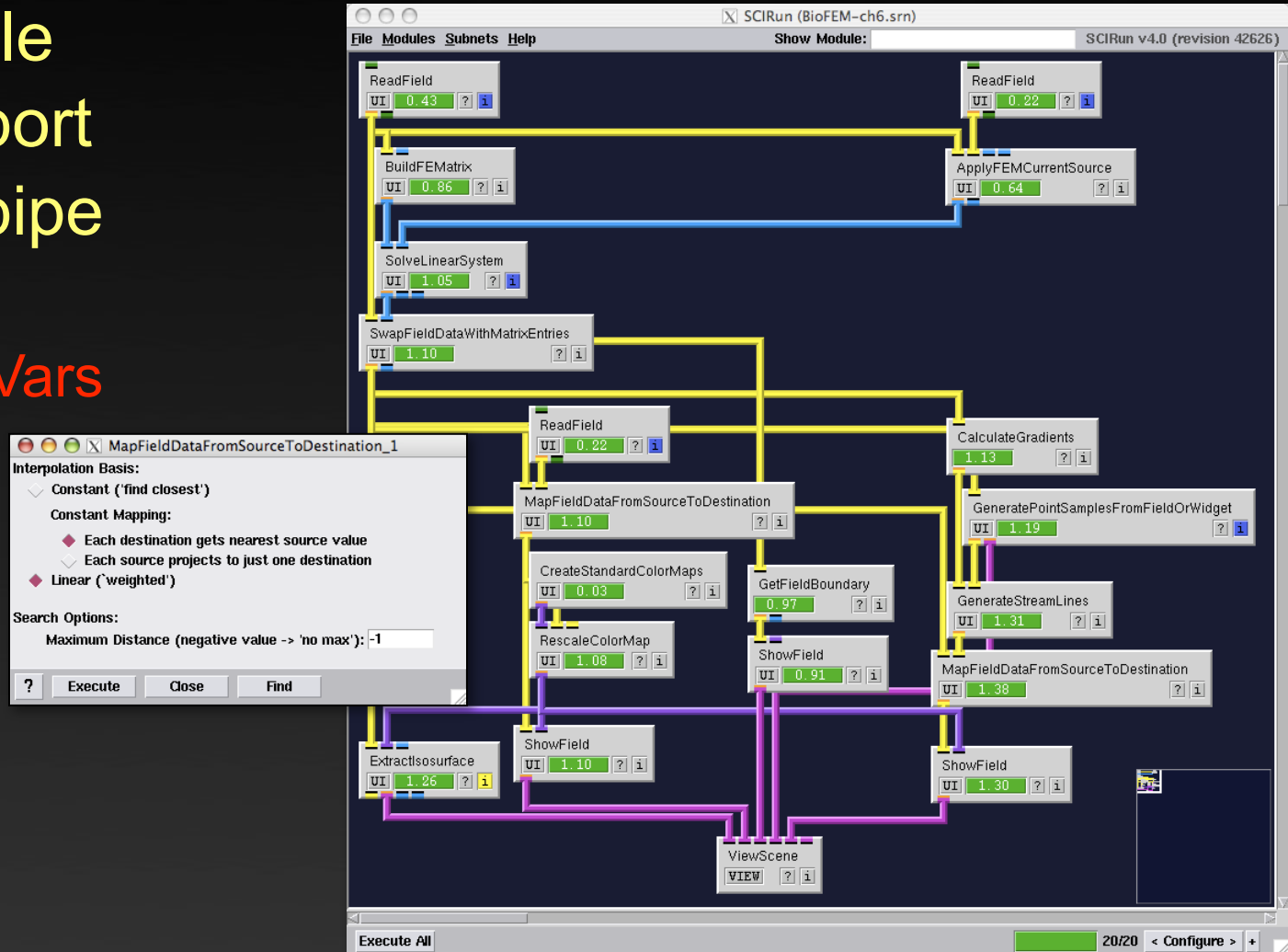
- Module
- Dataport
- Datapipe
- UI



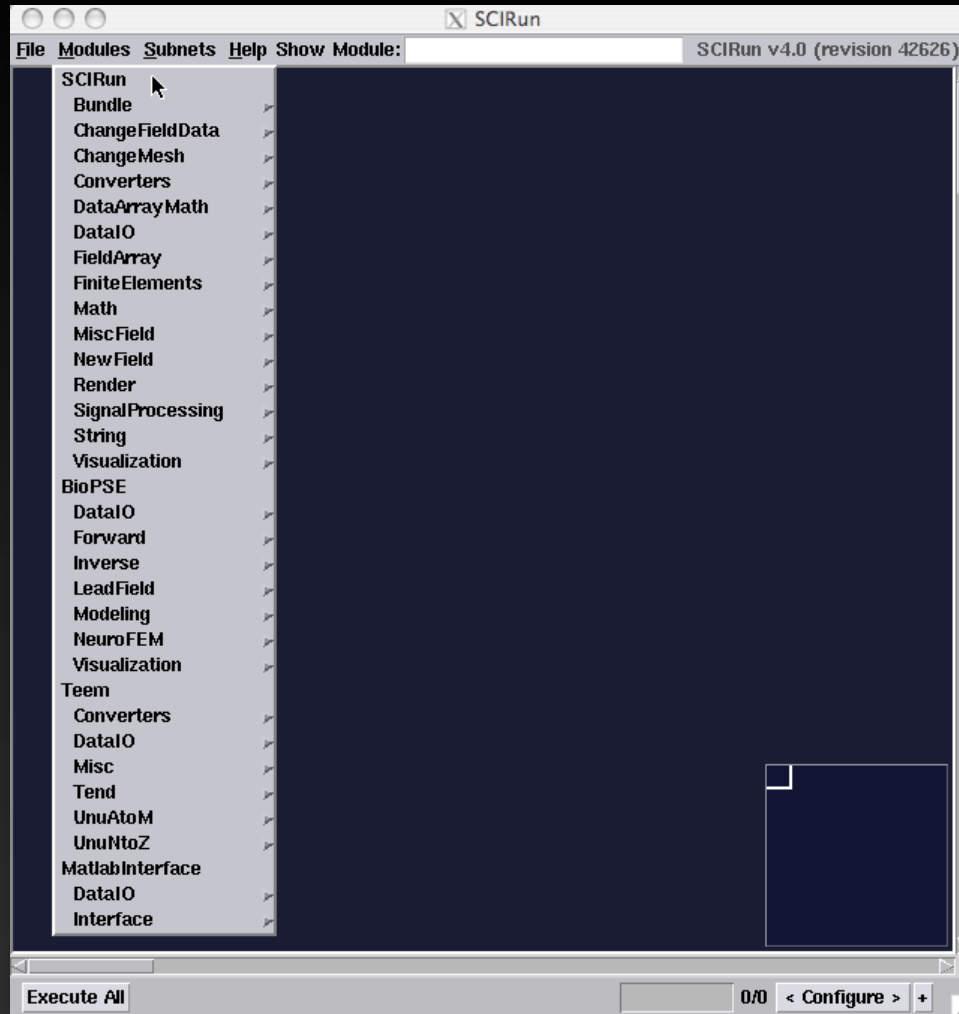
Network Elements

- Dataflow Vocabulary

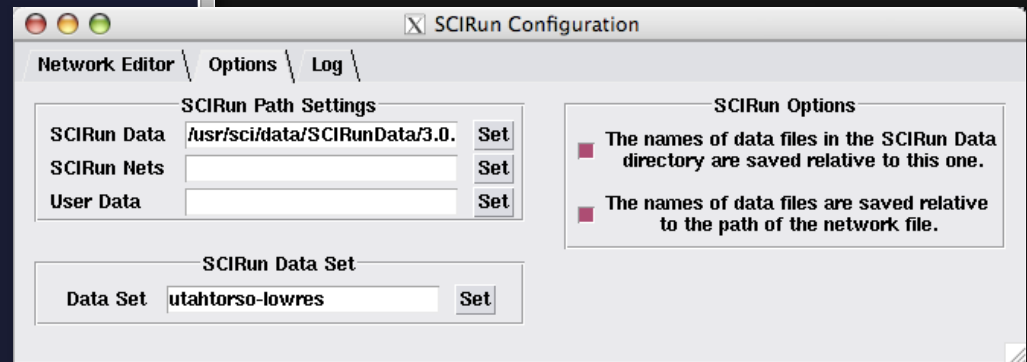
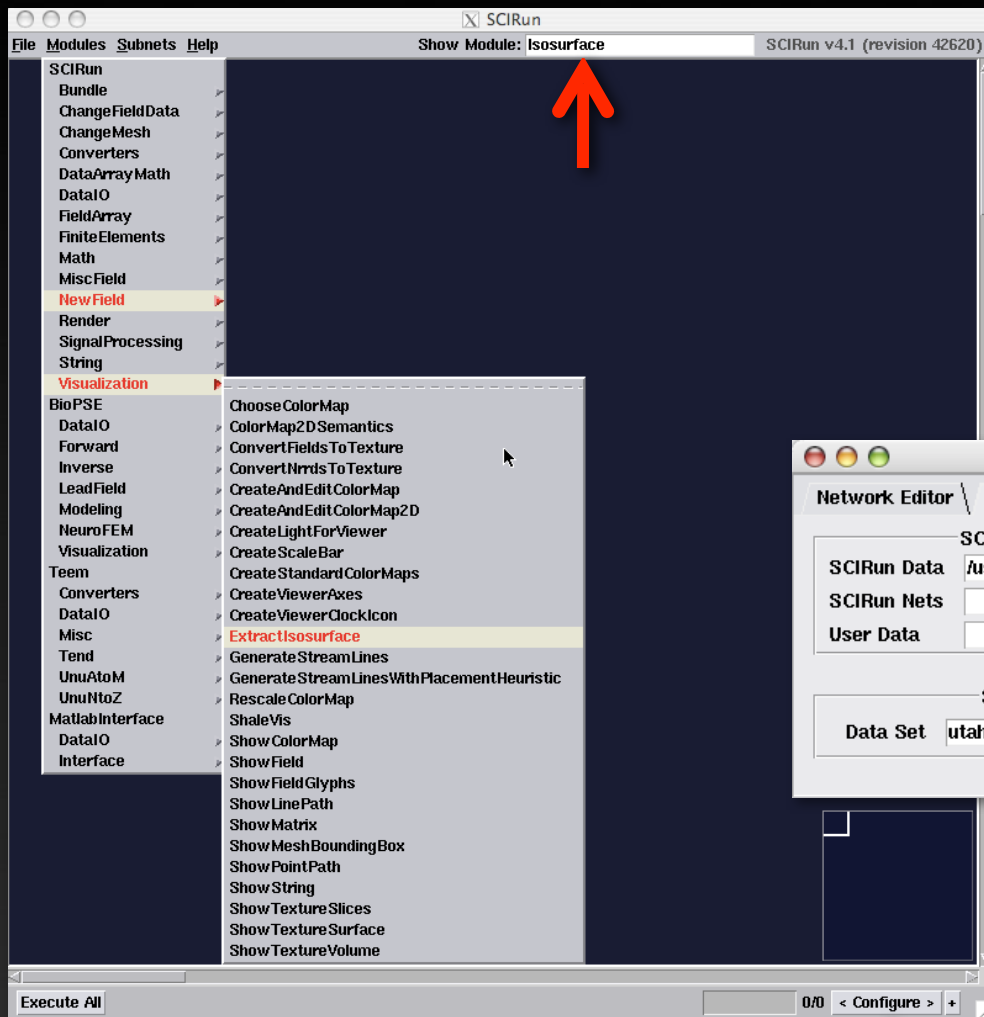
- Module
- Dataport
- Datapipe
- UI
 - GuiVars



Packages and Categories



Module Search & NetEdit Configure



Sample Networks

SCIRun/src/nets/Modules/

SCIRun/src/nets/Samples/

Lab 3

