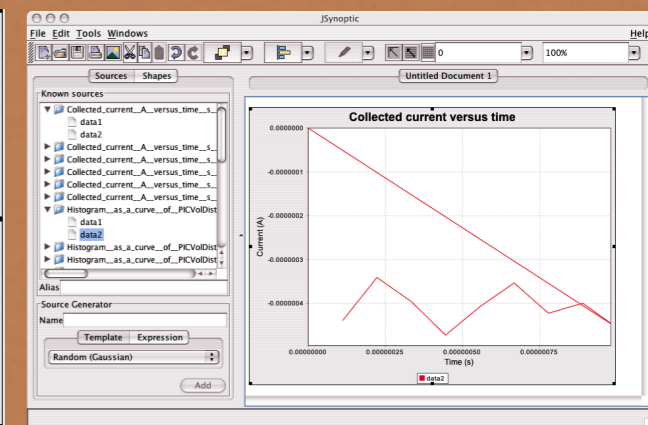
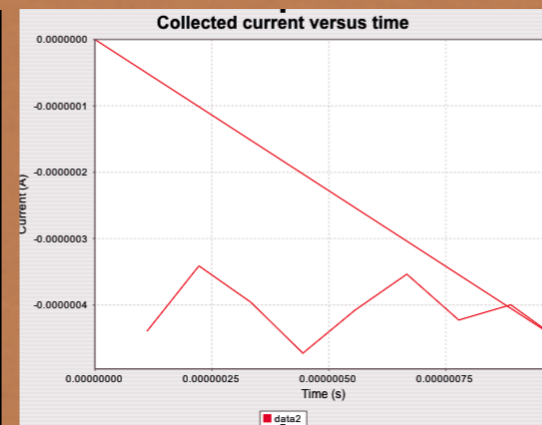
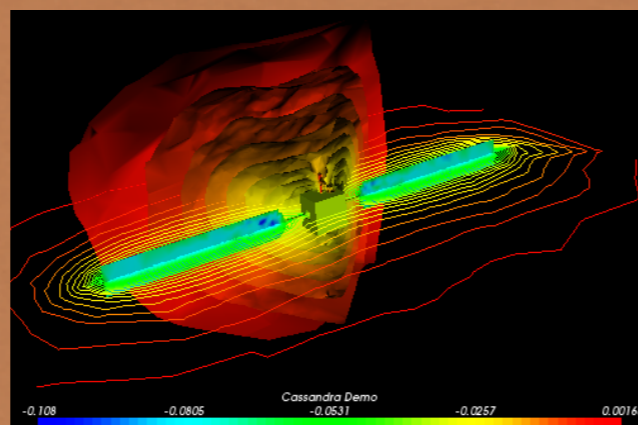
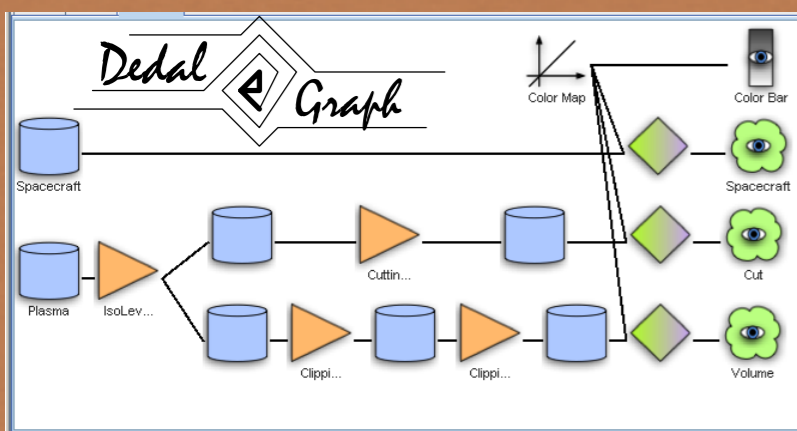


10th SPINE Meeting: 6-8 December 2005

SPIS-UI

A set of powerful post-processing tools



SPIS-UI and its post-processing tools

▶ **Generic data field manager**

- ◎ Build VTK data files on any topology (cell, face, edge, node)

▶ **2D data**

- ◎ Default embedded 2D plot
- ◎ JSynoptic for advanced 2D plots

▶ **3D data**

- ◎ Default embedded VTK viewer
- ◎ Cassandra for complex data processing
- ◎ Paraview for quick and simple data process

Generic data field manager

Select data origin →

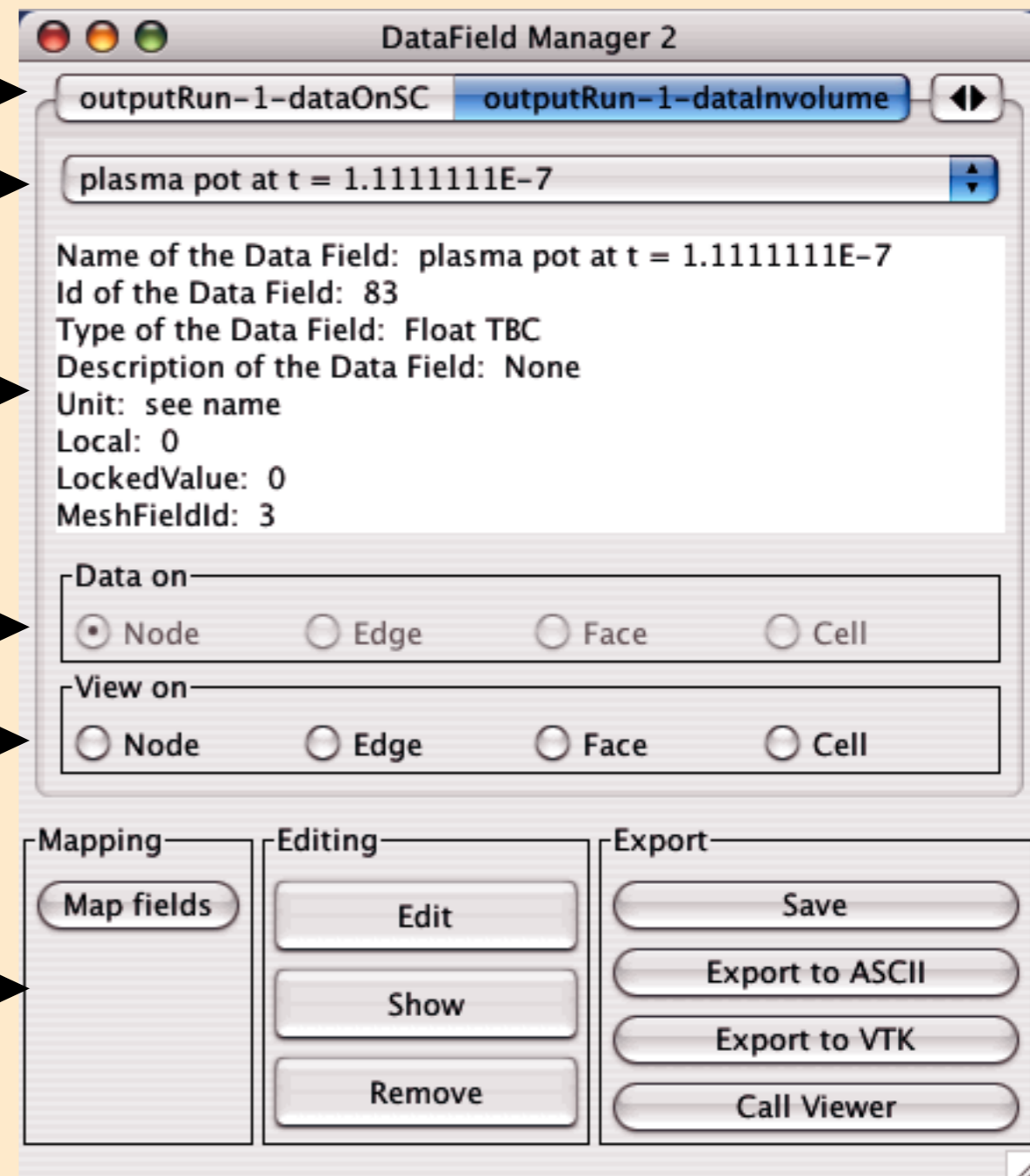
Select a computed data →

Computed data description →

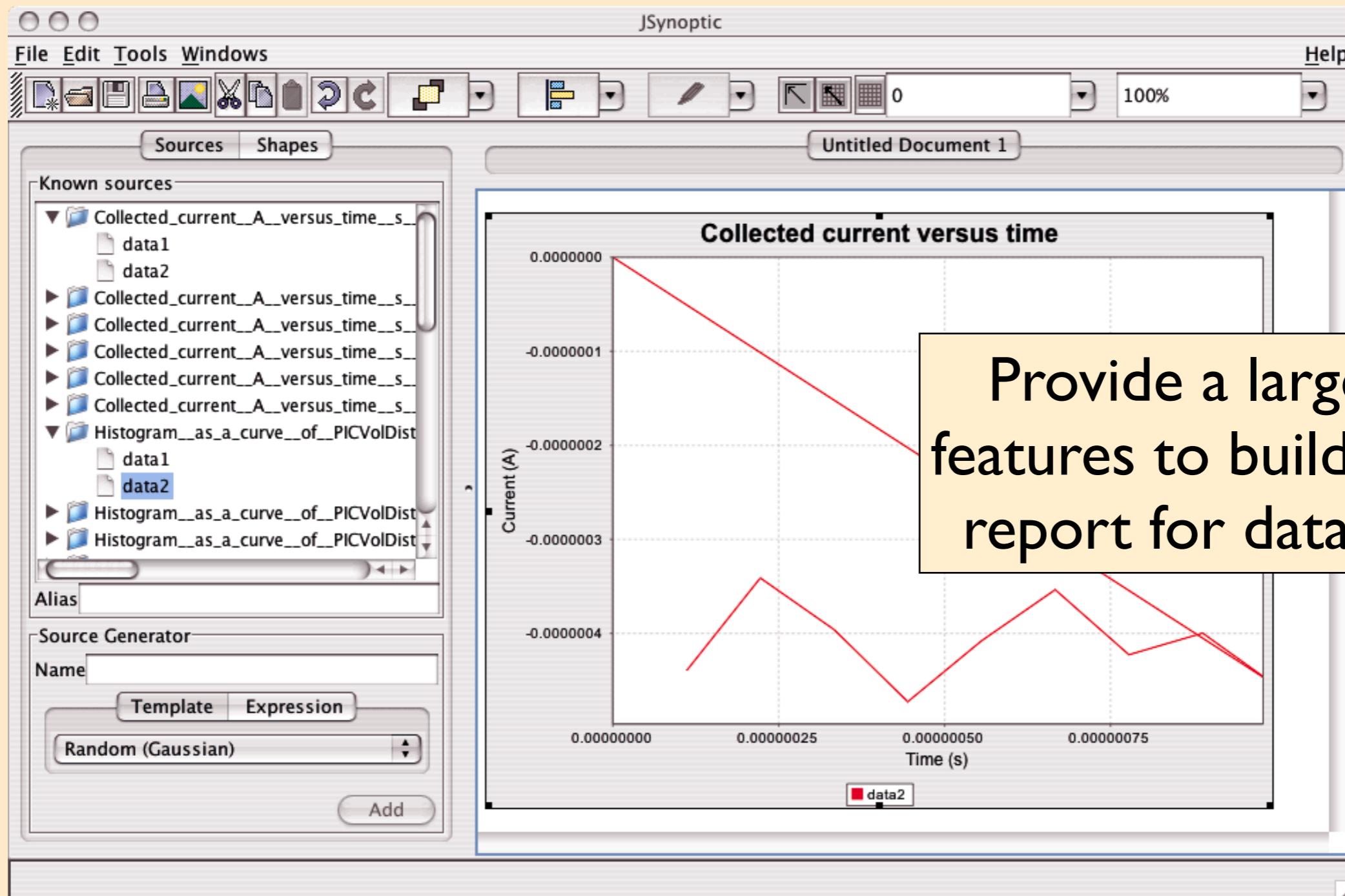
Original data mapping →

Type of data mapping to view →

Map, edit or export data →



2D post-processing: JSynoptic



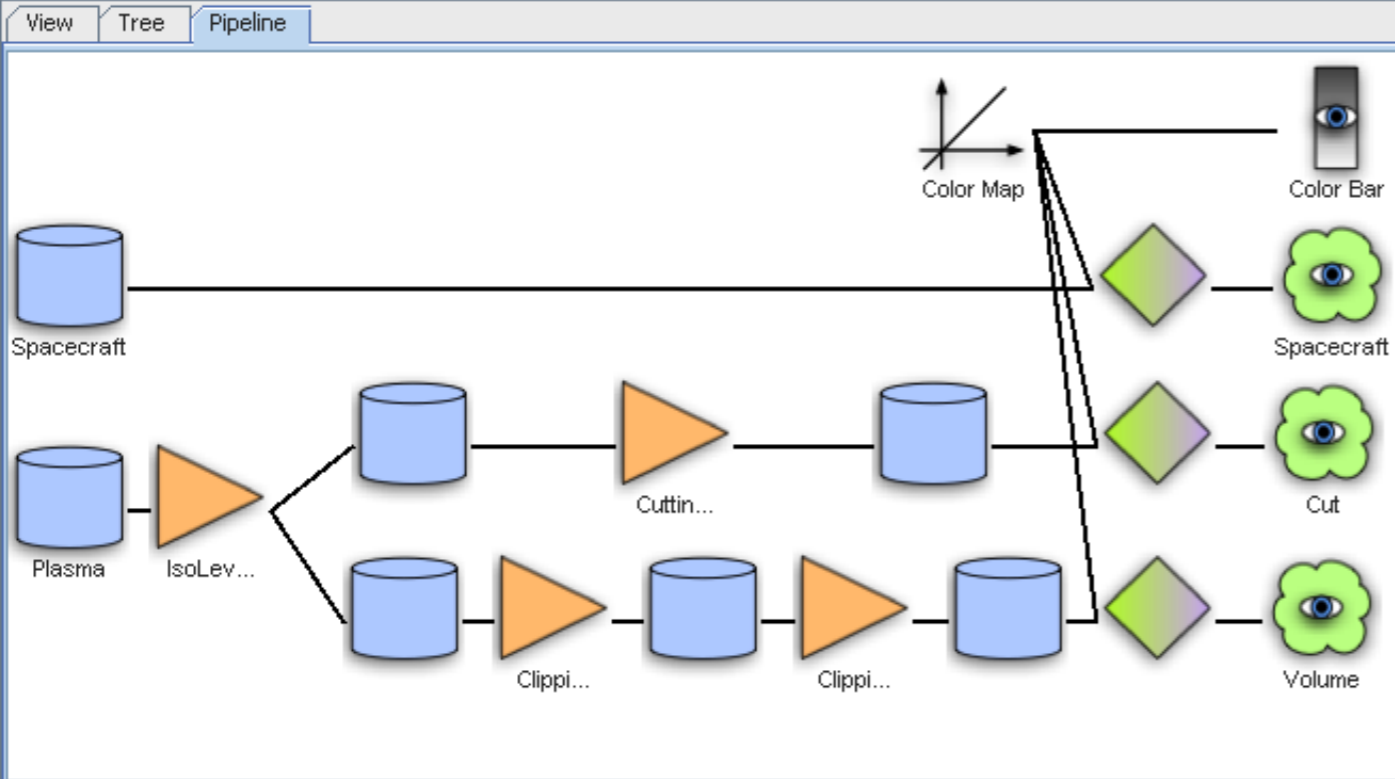
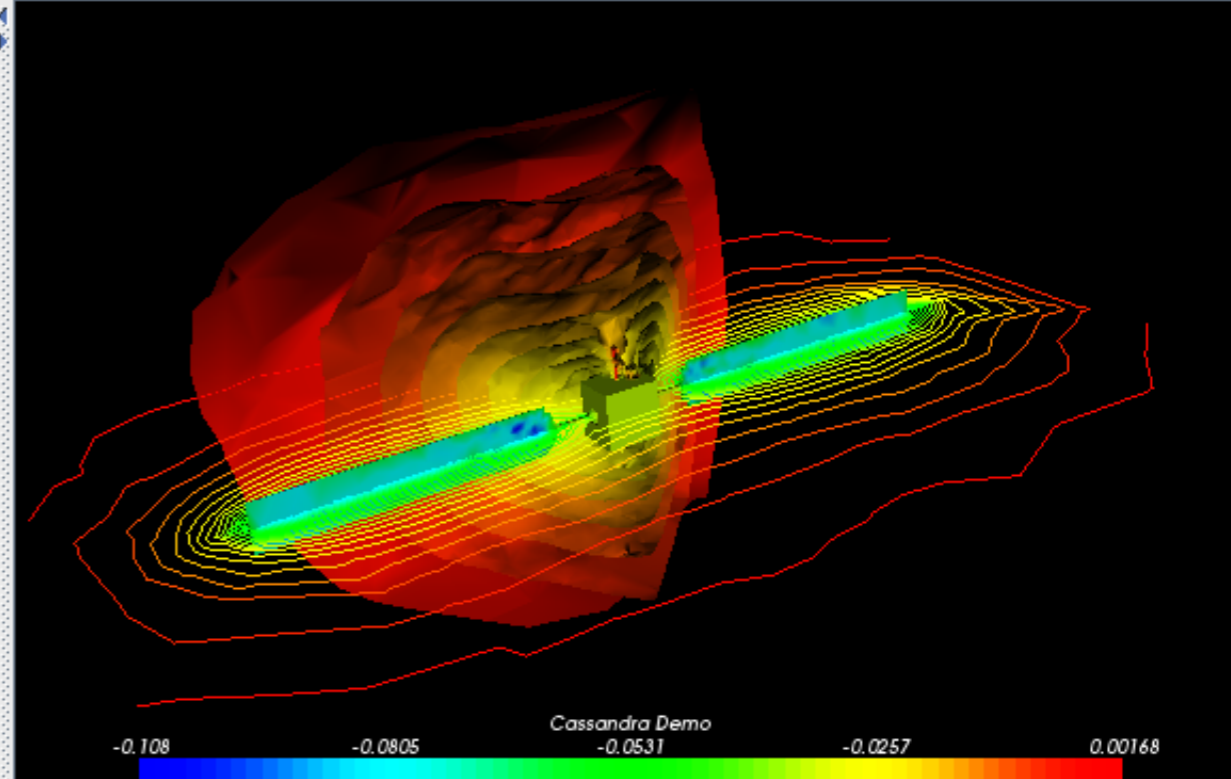
3D post-processing: Cassandra

Cassandra VTK viewer

File Edit View Sources Filters Tools Help

Save image XY XZ YZ Reset view

View Tree Pipeline

```

>>> cassandra.getPipeLineManager().getActorList().getElementAt(0)
Spacecraft

>>> cassandra.getPipeLineManager().getActorList().getElementAt(0).getVtkObject().GetProperty().setE
...
SetEdgeColor( [D ]
SetEdgeColor( double , double , double )
SetEdgeVisibility( int )

```

Cassandra “the generic VTK viewer”

▶ **Features**

- ◎ Scriptable (Python)
- ◎ Extendable (Plug-ins)
- ◎ Customizable (Dedicated: GUI, VTK filter..)

▶ **Advantages**

- ◎ Simple to use and extend
- ◎ Allow complex data processing
- ◎ Animation facilities

Cassandra “the scriptable VTK viewer”

- ▶ **Cassandra** integrates **JyConsole** an advanced Jython console with completion capability.
- ▶ **JyConsole** provides
 - ◎ The hot manipulation of data
 - ◎ External python scripts loading and execution
 - ◎ Dynamic and interactive data processing (*animation*)

```
>>> for i in range(100):  
    cassandra.getPipelineManager().getCassandraView().rotate  
rotate( double , double )
```

Cassandra “the extendable VTK viewer”

- ▶ **Cassandra** provides dynamic plug-in loading
- ▶ **Cassandra** plug-ins
 - ◎ VTK filter
 - cutting plane, iso-level, probing line...
 - ◎ Import data
 - med2vtk, hdf2vtk...
 - ◎ Export data
 - vtk2hdf, vtk2med, jpeg, png, tiff, mpeg, avi...
 - ◎ Pre-set VTK pipelines...

Make your own plug-in

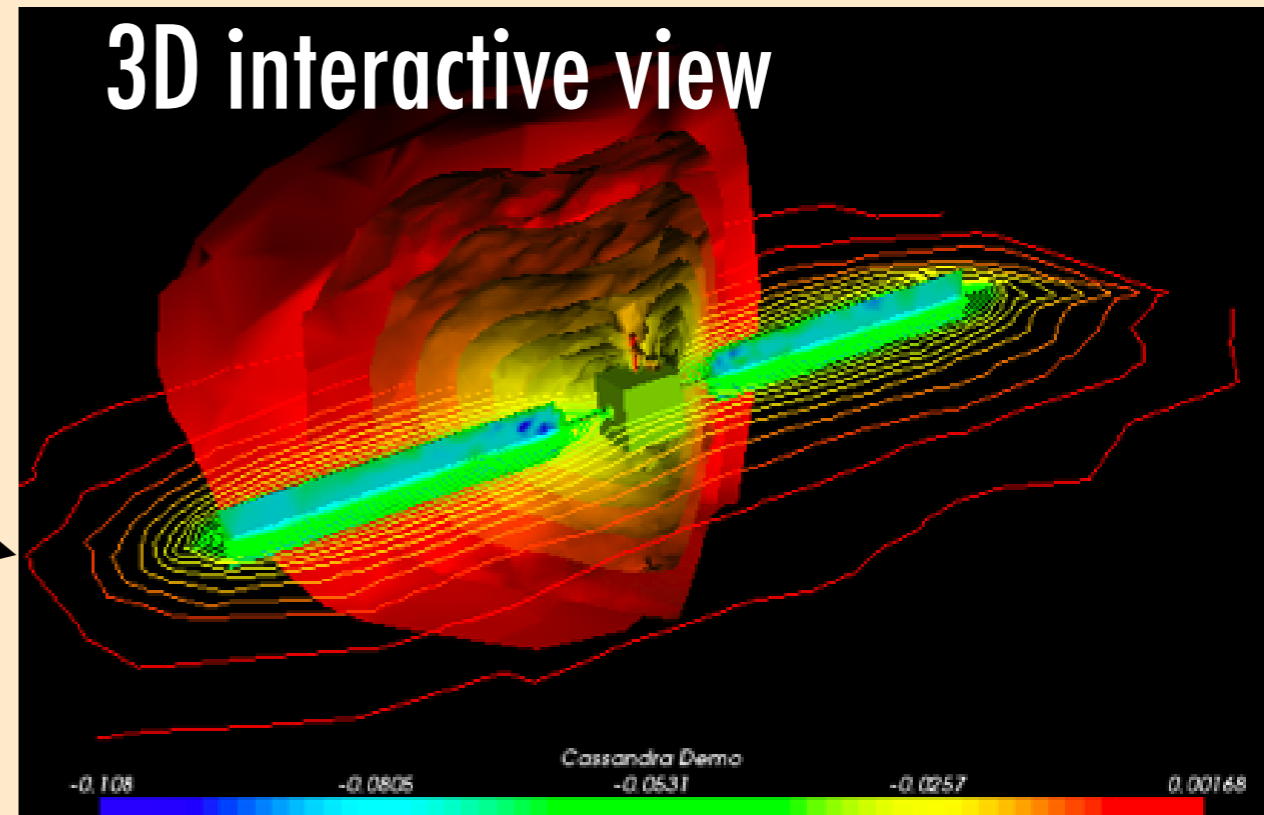
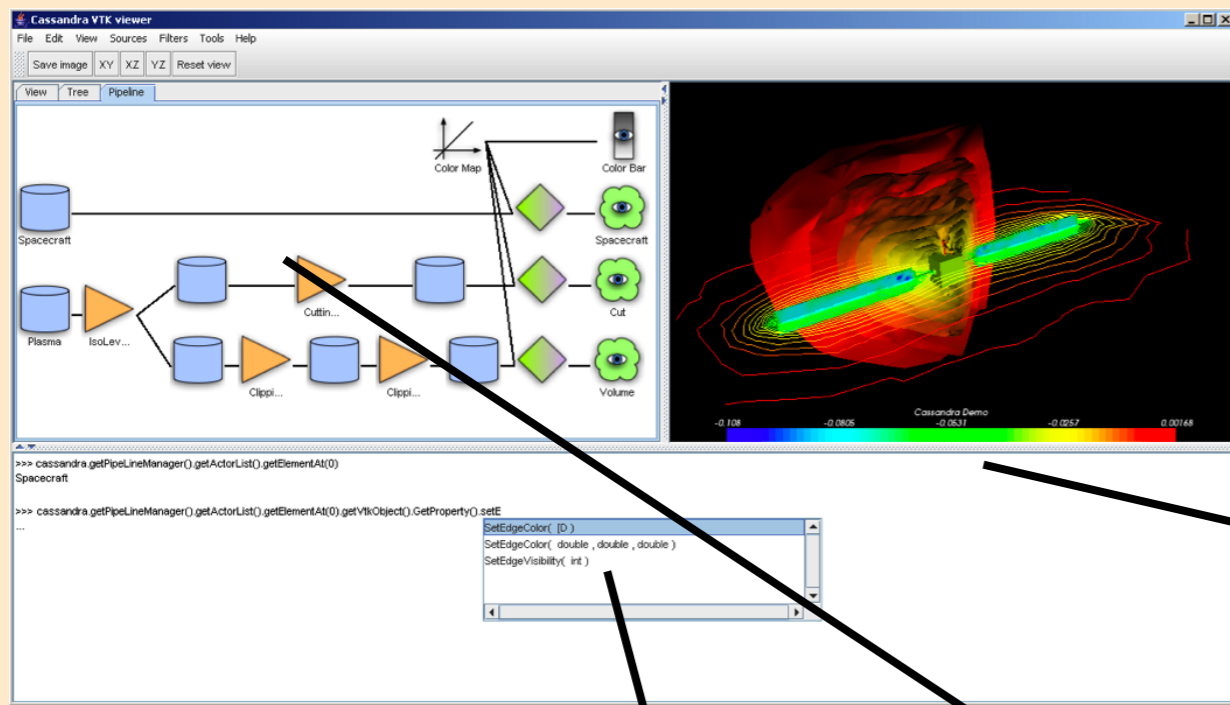
- ▶ **Cassandra** plug-in is composed of
 - ◎ a name
 - ◎ a contextual menu (to access to it's features)
 - ◎ a remove method (to destroy its data)

- ▶ **Cassandra** plug-ins have access to
 - ◎ the menu (to add it's own actions)
 - ◎ the plug-in manager (to register itself)
 - ◎ the pipeline manager (to register its components)

Cassandra usage

- ▶ Load VTK file(s)
- ▶ Add filters (cutting plane, iso-level, probing line...)
- ▶ Connect the pipeline
 - ◎ iso-level input (vtk file, cutting plane ?)
 - ◎ cutting plane input ? (vtk file, iso-level ?)
- ▶ Show or hide outputs
- ▶ Animate your data

Cassandra concept

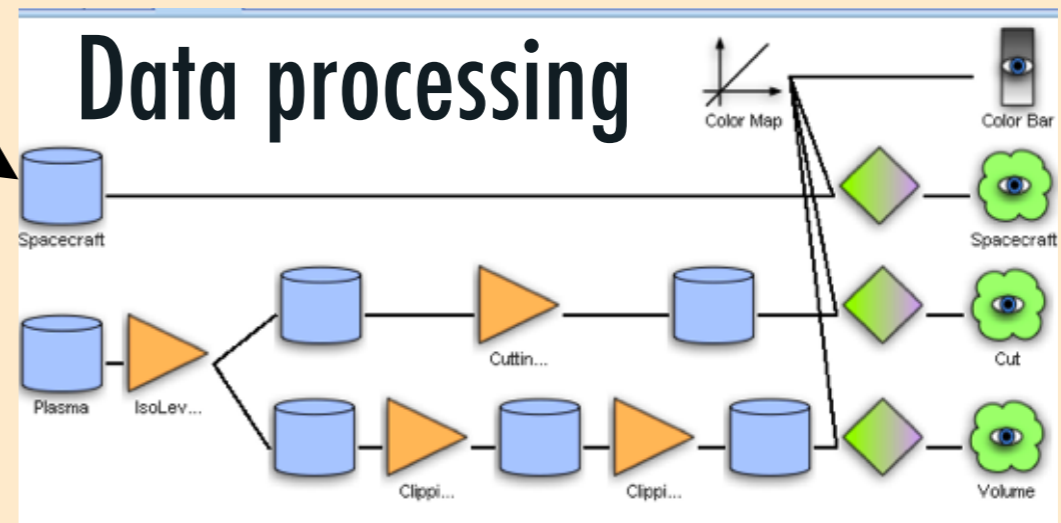


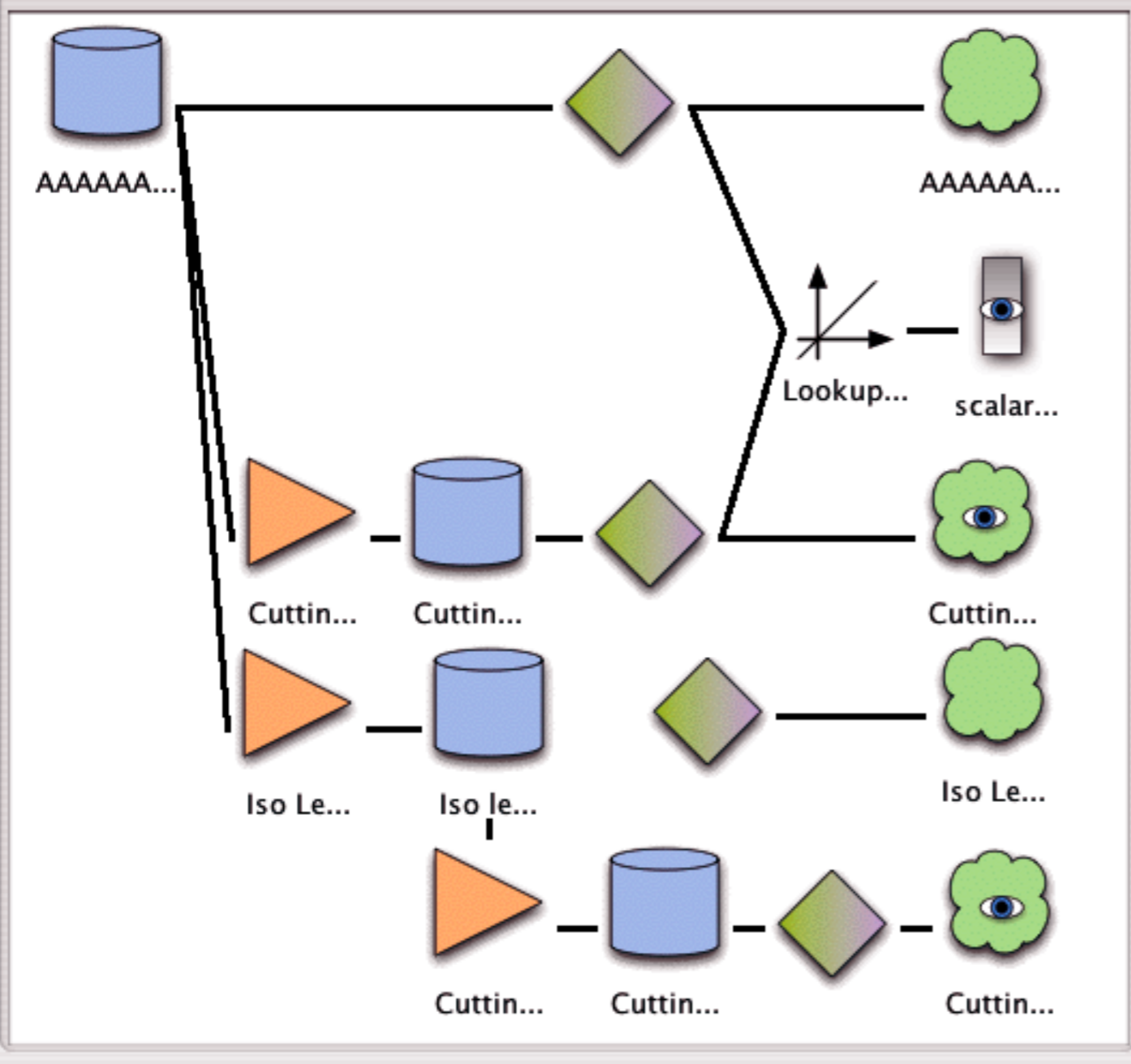
Quick interactive prototyping

```
.getElementAt(0).getVtkObject().GetProperty().setE
```

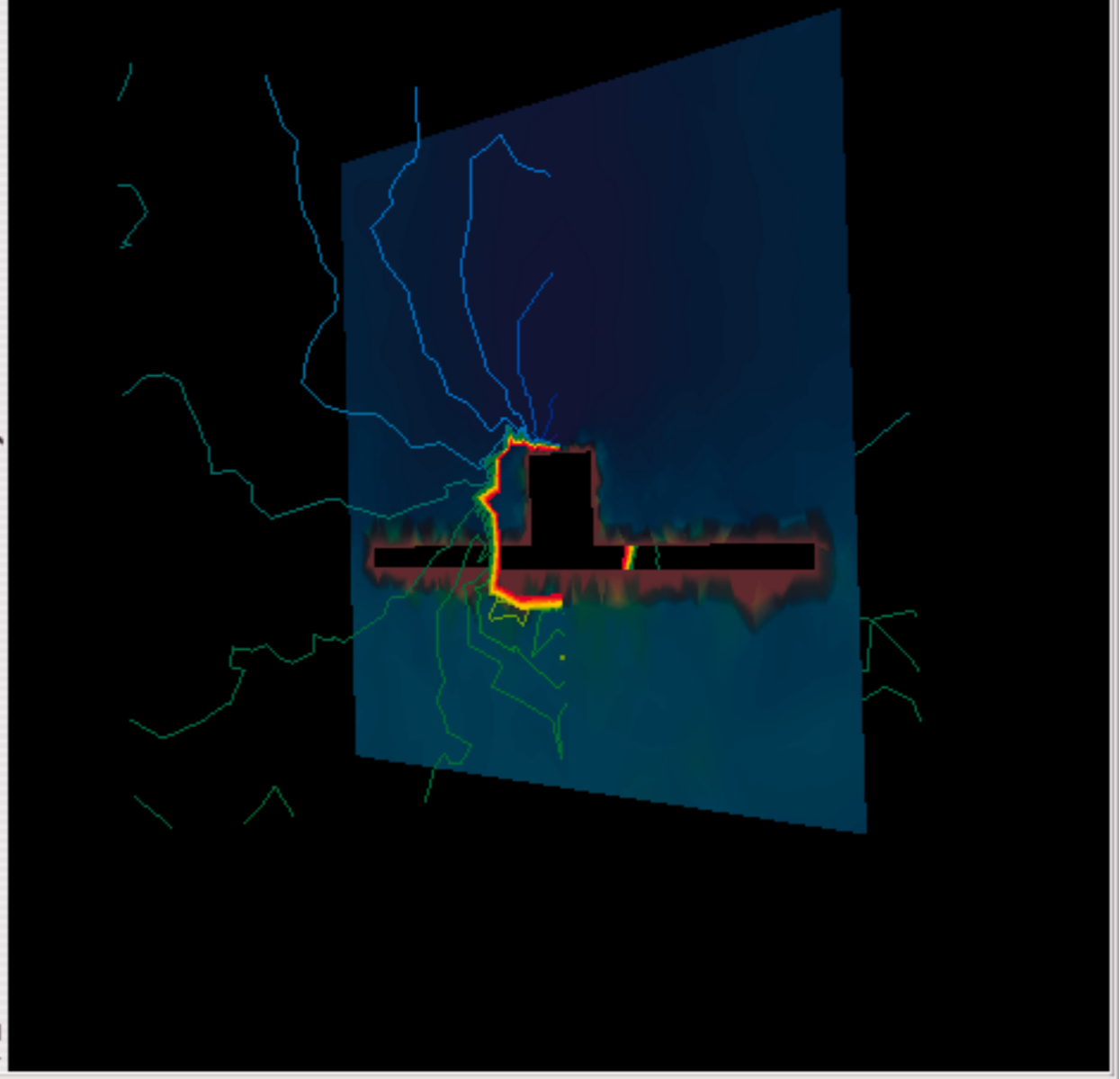
```
SetEdgeColor( [D ] )
SetEdgeColor( double , double , double )
SetEdgeVisibility( int )
```

Data processing





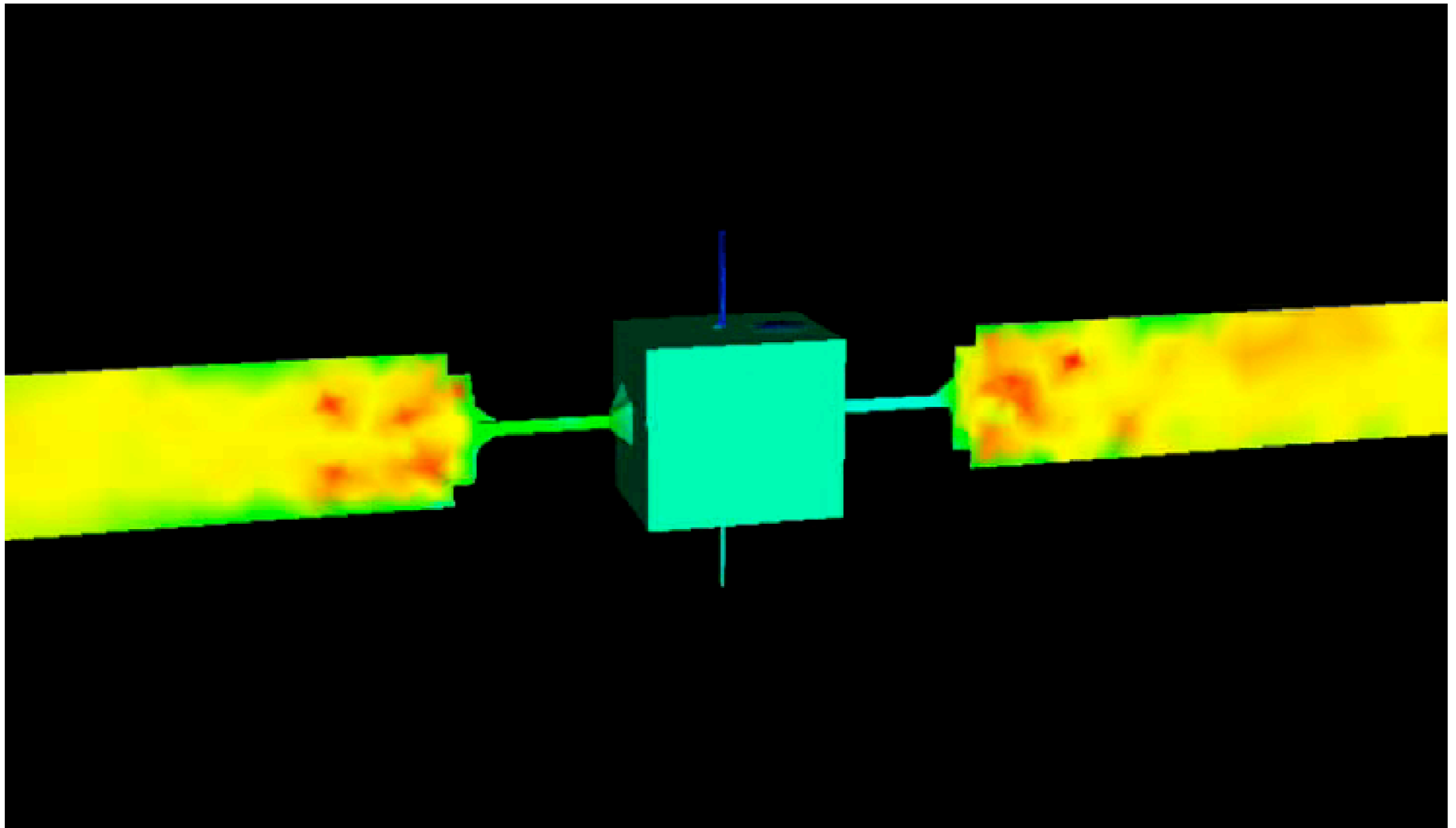
And now under MAC OS-X (still alpha)



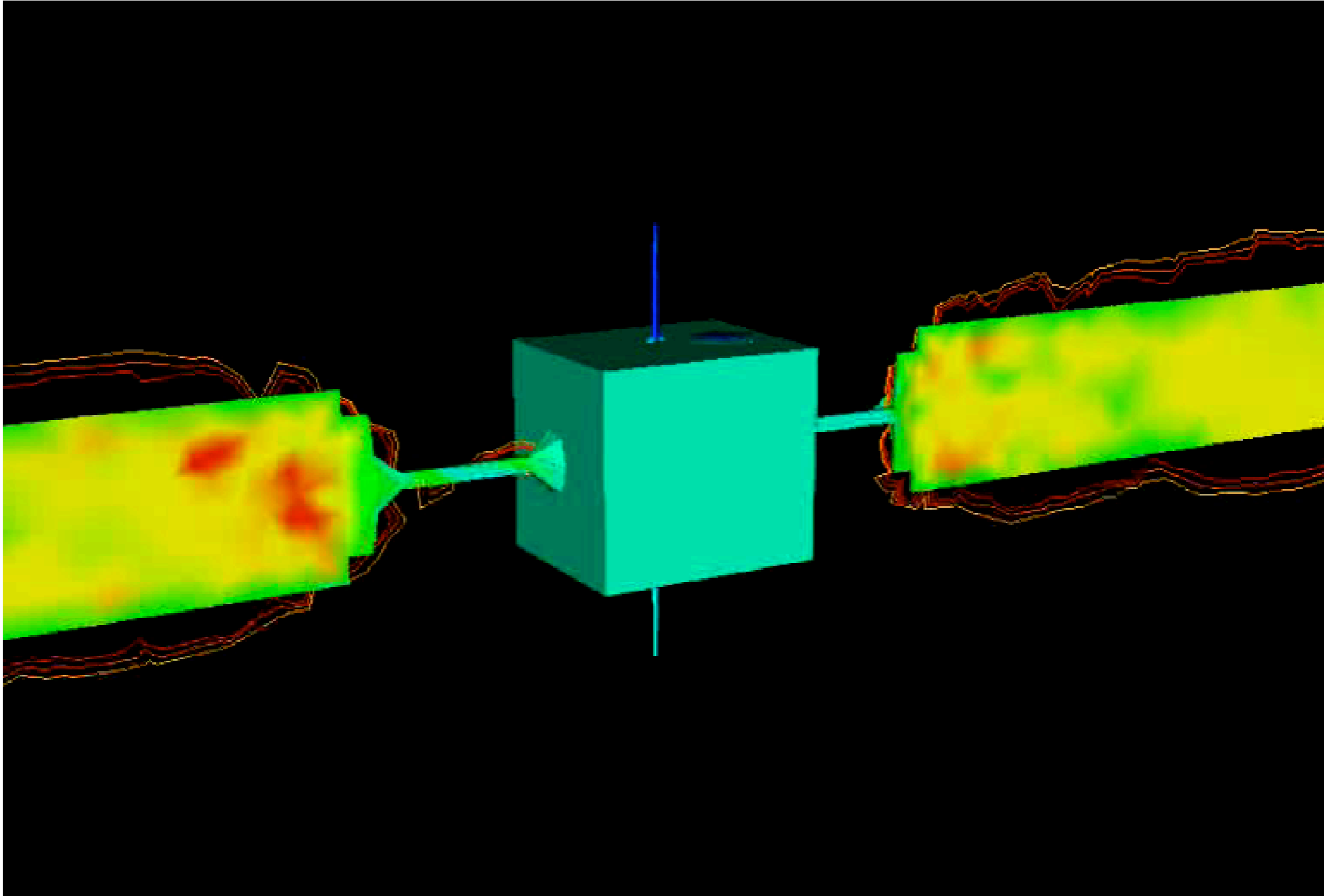
Welcome on JyConsole by Artenum (www.artenum.com) !

```
>>> for i in range(360):
    cassandra.getPipeLineManager().get
```

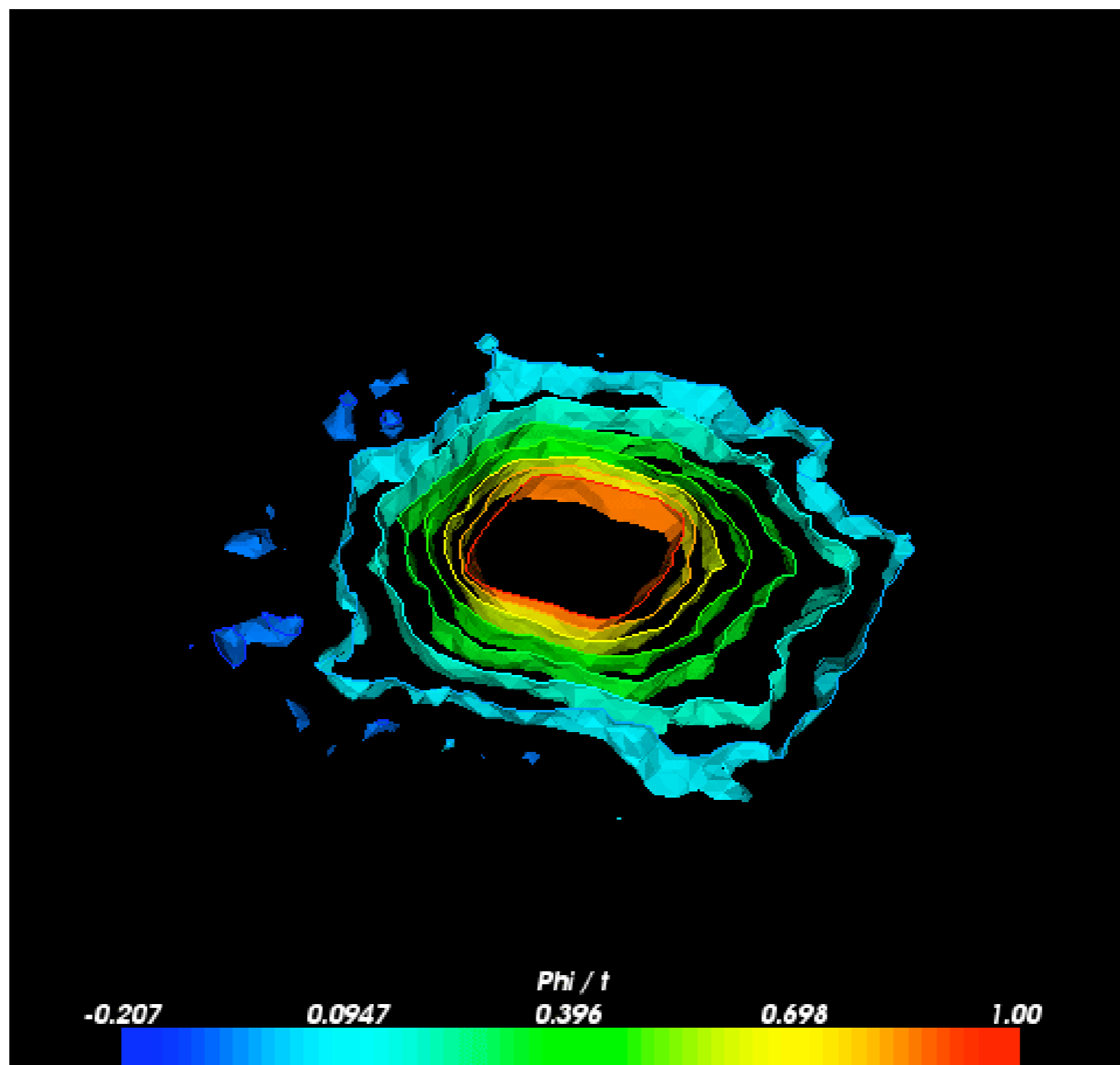
- getActorList()
- getCassandraView()
- getClass()
- getDataSetList()
- getFilterList()
- getLookupTableList()

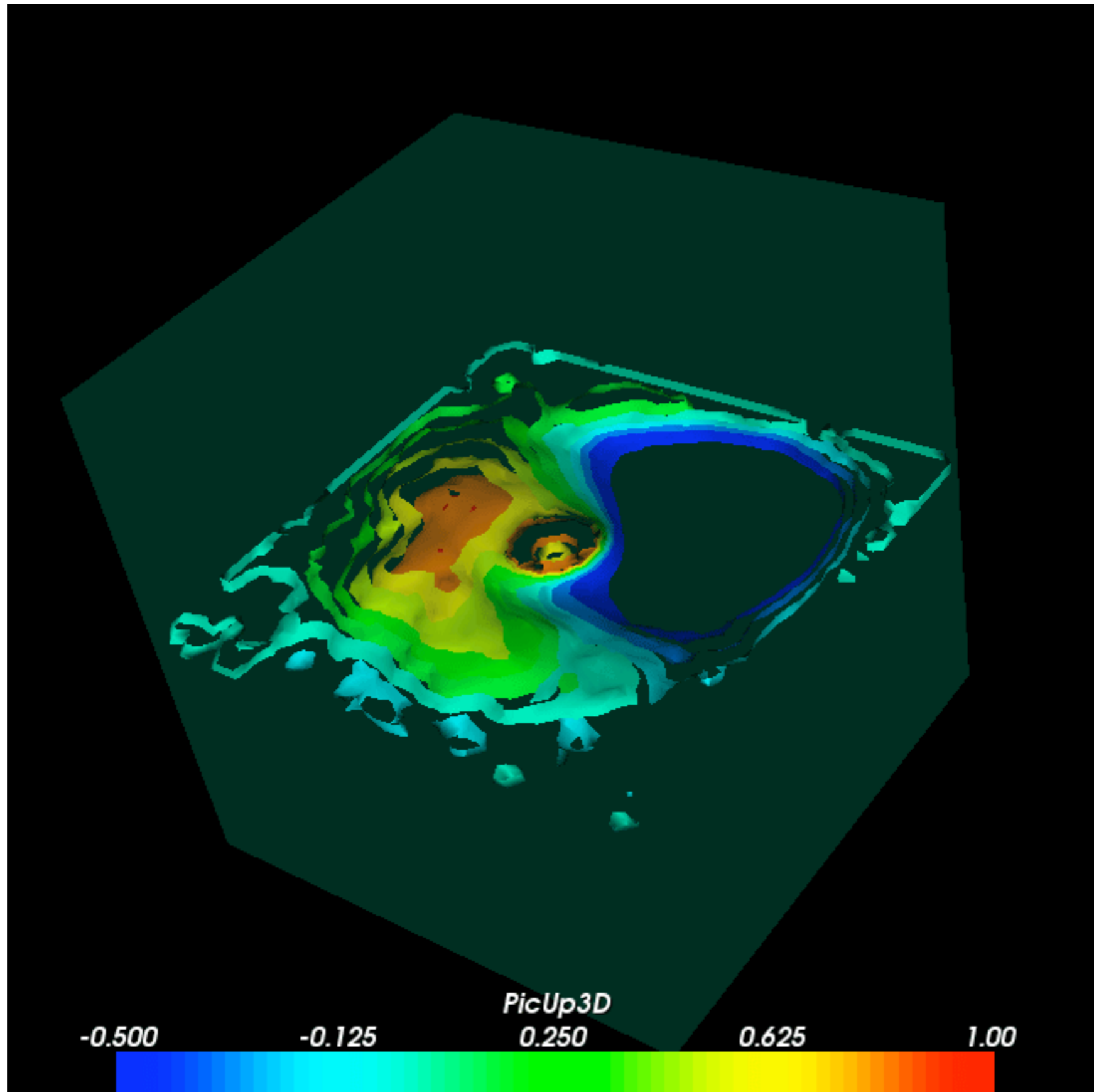


Animation done using Cassandra for the 9th SCTC



Animation done using Cassandra for the 9th SCTC





Cassandra “the beginning...”

- ▶ **Already included into SPIS**
- ▶ **Released June 2005:** more than 350 downloads
- ▶ **Cassandra** provides
 - ◎ the first step for data processing
 - ◎ a robust VTK framework
 - ◎ a quick VTK prototyping environment
 - ◎ a set of basic tools
- ▶ **Cassandra** needs
 - ◎ dedicated tools (plug-ins)
 - ◎ your contribution for your specific needs !

Contact Artenum

<http://www.artenum.com/en/products/cassandra.php>

- ▶ **Technical informations**

- © sebastien.jourdain@artenum.com

- ▶ **Any other informations**

- © j.forest@artenum.com