可視化ソフト、どれが最高ですか?
from 2ch

Osaka University

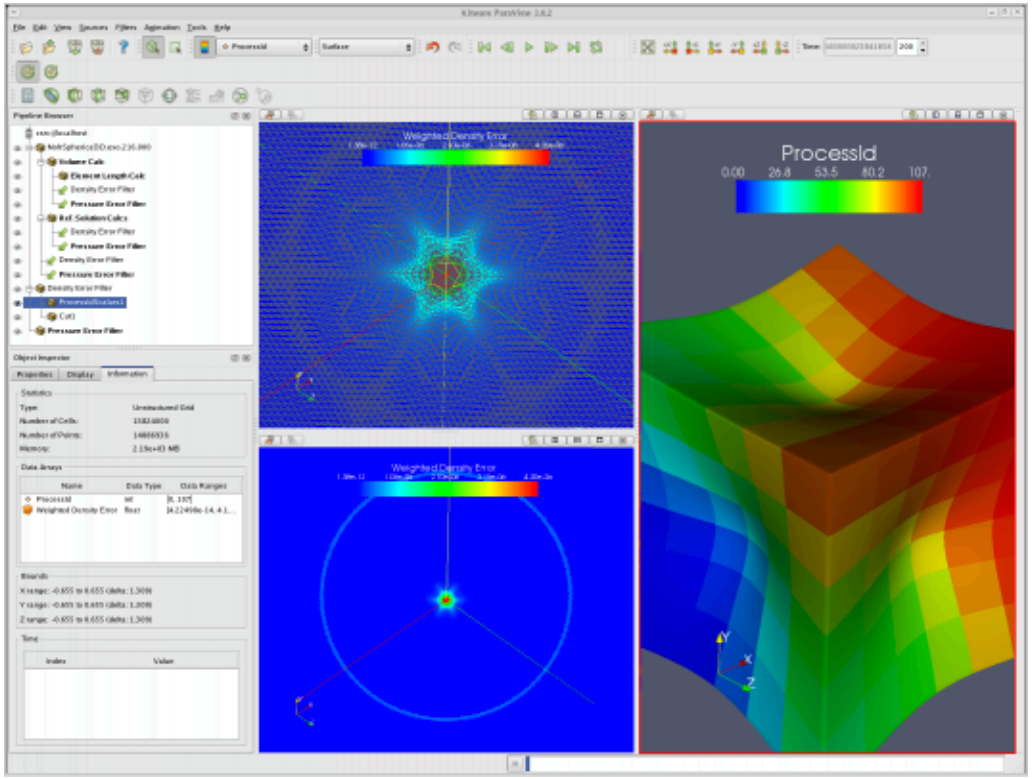
Y. Takagi

April 5, 2014@Kansai Open CAE workshop

3D visualization software

ParaView

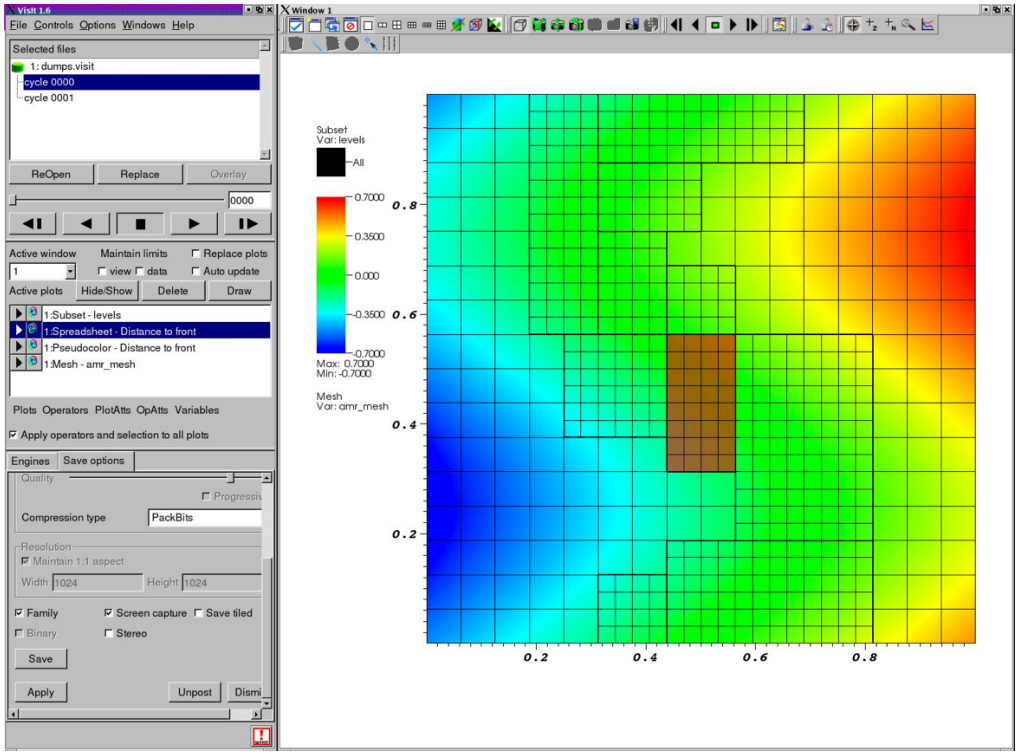
- Kitware
- Version 4.1
- Features
  - Multi-platform
  - VTK based
  - Python script
  - parallel processing



http://www.paraview.org/

VisIt

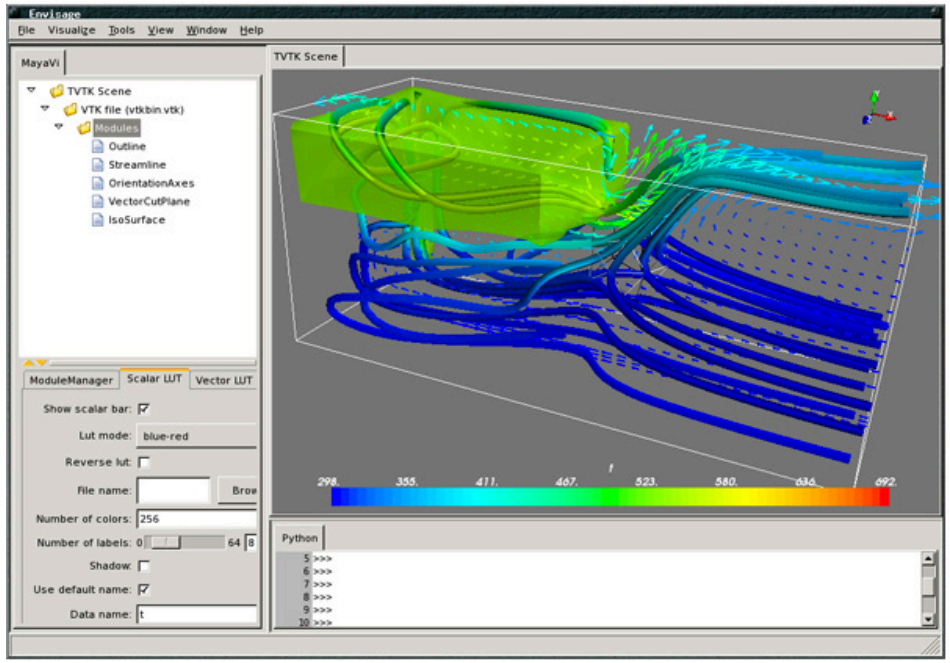
- DOE, Lawrence Livermore National Laboratory
- Version 2.7.2
- Features
  - Multi-platform
  - Extreme scale
  - C++, Python, JAVA interfaces
  - RIKEN manual



https://wci.llnl.gov/codes/visit/

MayaVi (MayaVi2)

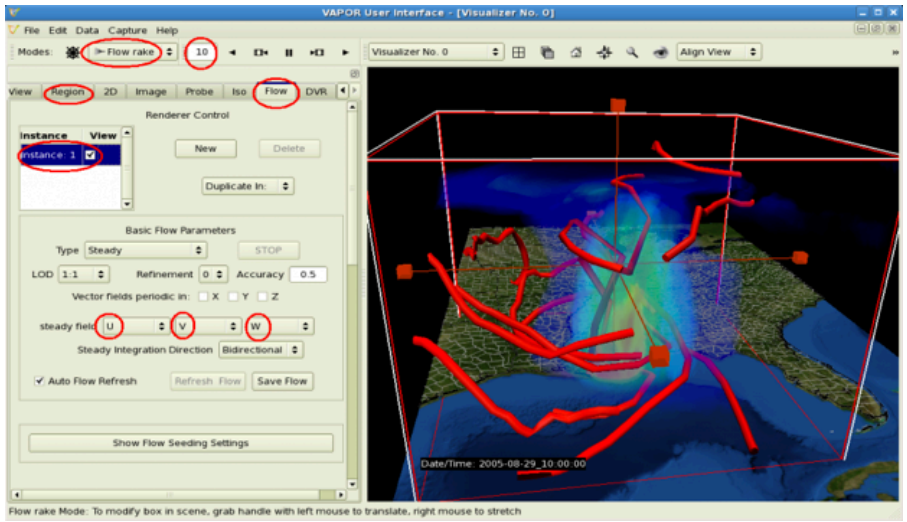
- Prabhu Ramachandran (IIT)
- MayaVi1 (~2005), MayaVi2 (~Present)
- Features
  - Multi-platform
  - Python based, VTK
  - Traits based wrapper



http://code.enthought.com/projects/mayavi/

VAPOR

- Visualization and Analysis Platform for Ocean, Atmosphere, and Solar Researchers
- NCAR, U. C. Davis, Ohio State Univ.
- Version 2.3.0
- Features
  - Multi-platform
  - Terascale size data sets
  - Python
  - WRF-ARW datasets



http://www.vapor.ucar.edu/

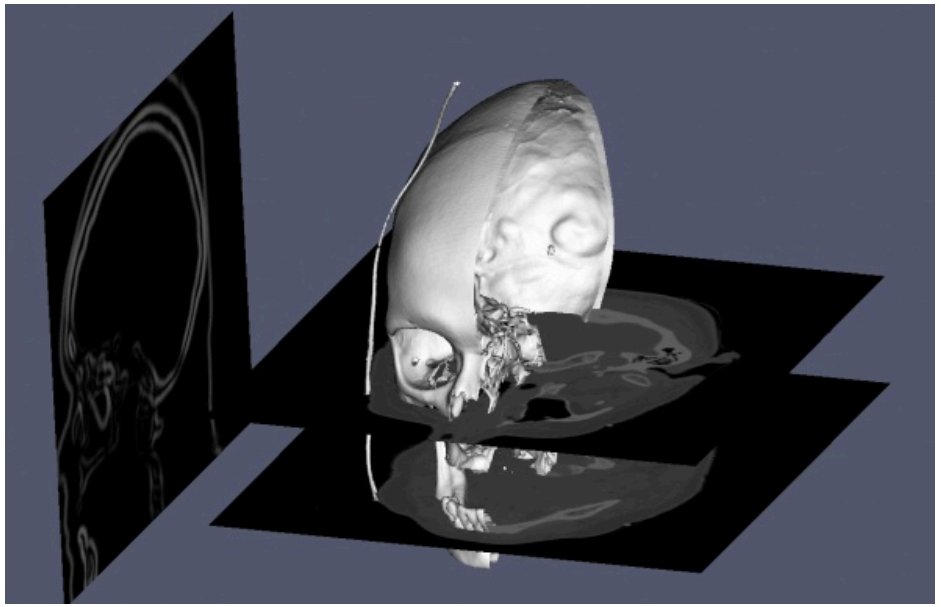
Ensight Free

- Free version of commercial Ensight
- Restriction
  - Single processing
  - Elements: <2,000,000 (3D), <35,000 (2D), <1,000 (points), <200,000 (poly), <2,000,000 (total)
  - Fonts are restricted.
  - MPEG-2 is not supported.
  - No support/Japanese document.

http://www.ceisoftware.com/ensight-free/

VTK

- Visualization Toolkit (VTK)
- Kitware
- Features:
  - C++ library based on OpenGL
  - Tcl/Tk, Python, Java wrappers
  - Multi-platform
  - Visualization framework

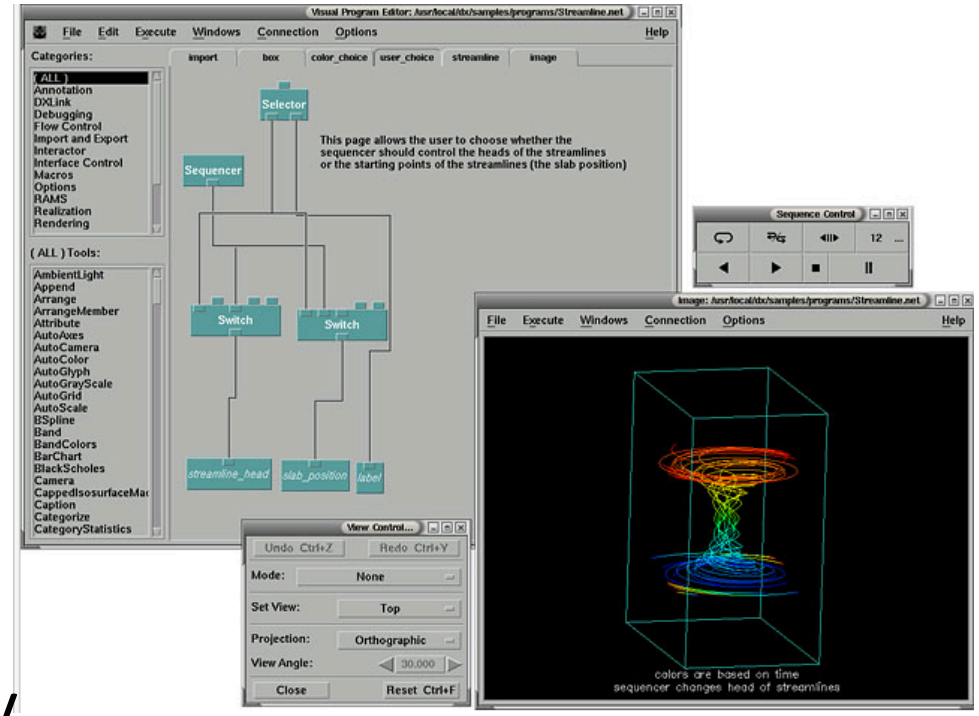


http://www.vtk.org/

OpenDX

- Open Data Explorer, IBM's scientific data visualization software
- Version 4.4.4 (?)
- Features:
  - Based on the Motif widget toolkit
  - Graphical module editor

http://www.opendx.org/



Other softwares

- Vis5d+
  - OpenGL based.
- POV-Ray
  - Free ray-tracing (CG) software

Requirement for scientific/engineering visualization

- Large scale data loading
- Parallel processing
- Fast rendering
- Input data format
- Output image format
  - bmp, png, tiff, …, wmf, eps
- Easy animation

2D/1D software

- matplotlib
- GMT
- AV似非
- ROOT
- gnuplot
- Ngraph
- Samurai Graph
- Sma4
- Postscript, LaTeX
- calcomp
- PGPLOT

Detail of each software is under investigation (April, 2014).