



# Scientific Visualization 210

## ParaView for HPC

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# Getting Started

- Install ParaView v6.0.1
  - Download: <https://www.paraview.org/download>
- Workshop Materials
  - Visualization Lab Wiki: <https://wiki.vis.kaust.edu.sa>
  - Training Page: <https://wiki.vis.kaust.edu.sa/training/overview>
  - Download data sets and slides:  
<https://wiki.vis.kaust.edu.sa/training/scivis/2026/paraviewhpc>

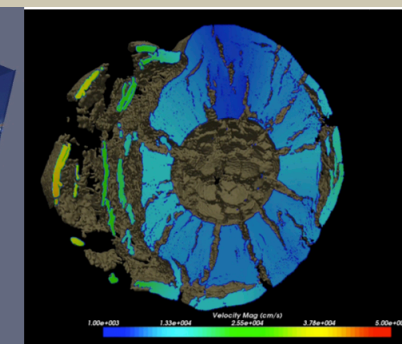
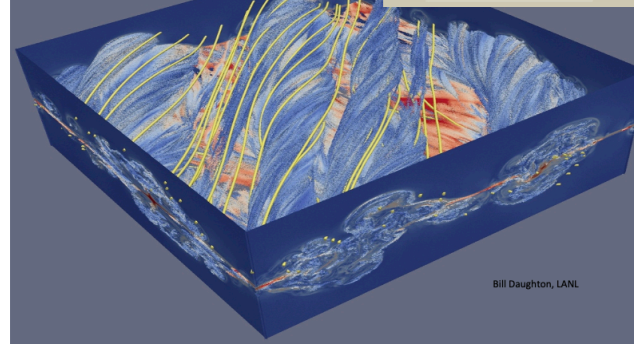
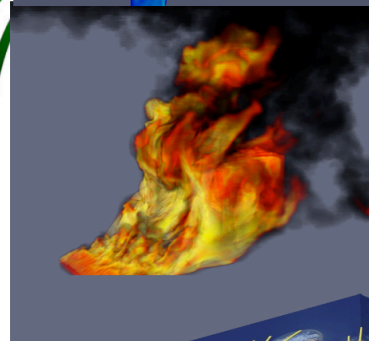
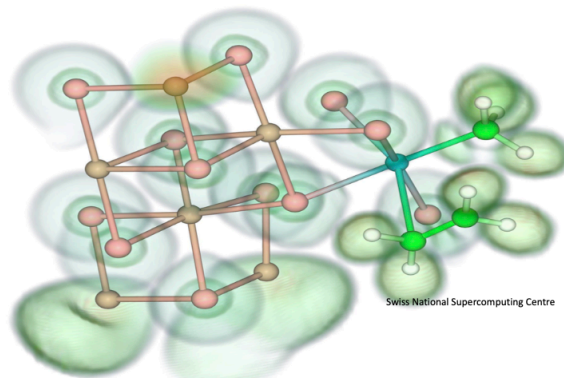
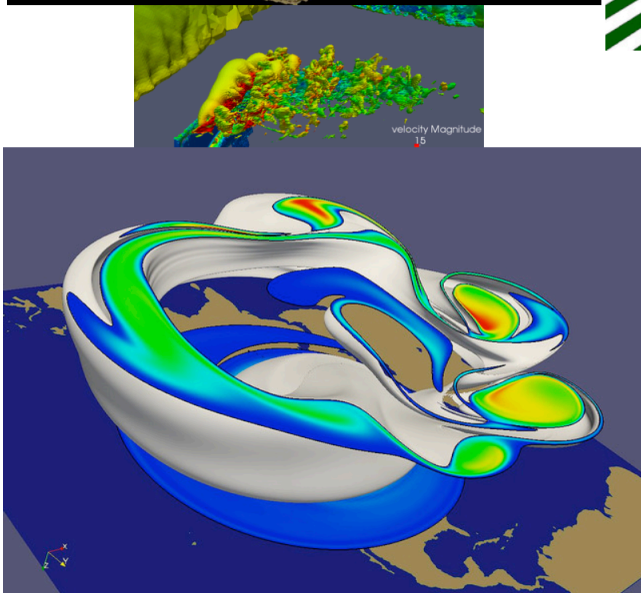
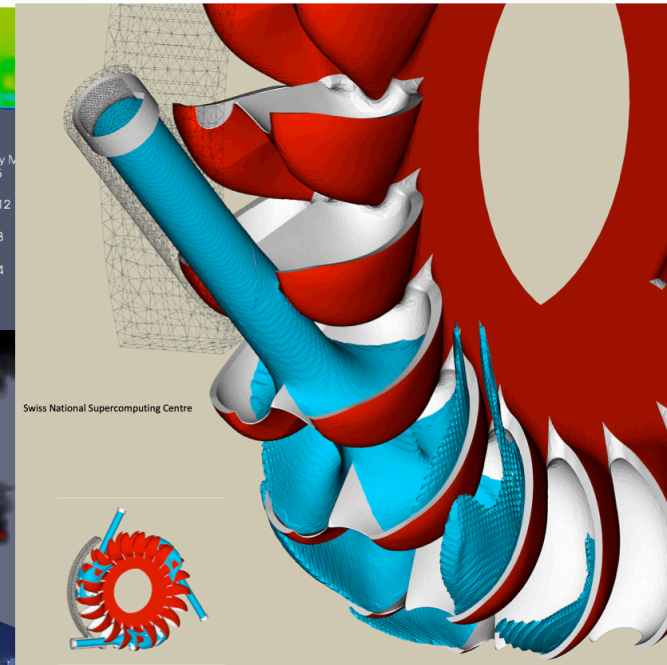
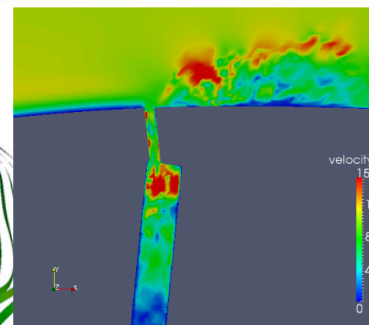
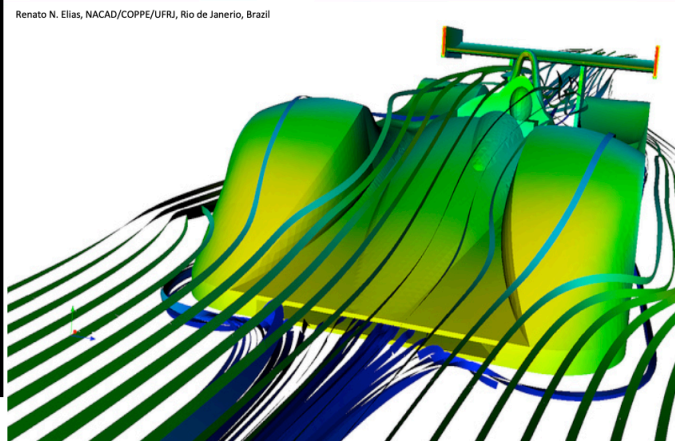
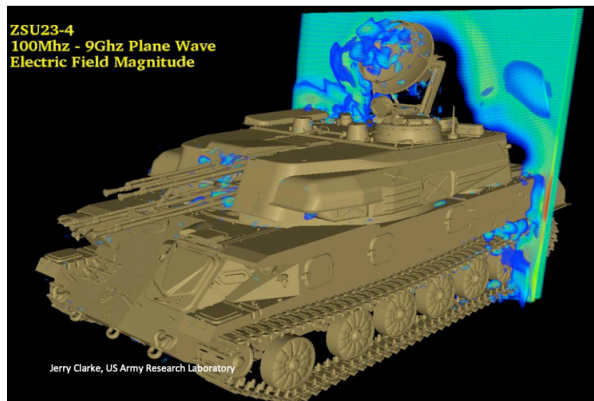


# Workshop Goals

- Hands-on learning with ParaView
  - Introductory course
  - Slides / demonstrations
- What is ParaView ?
  - Opensource, scalable, multi-platform visualization application
  - Support for distributed computations to process large datasets
  - Commercial maintenance and support (Kitware Inc.)
- Why Paraview @KAUST
  - Available on all major computational resources at KAUST
  - Paraview on Ibex and Shaheen
  - Paraview @ KAUST Visualization Laboratory



# What is ParaView?

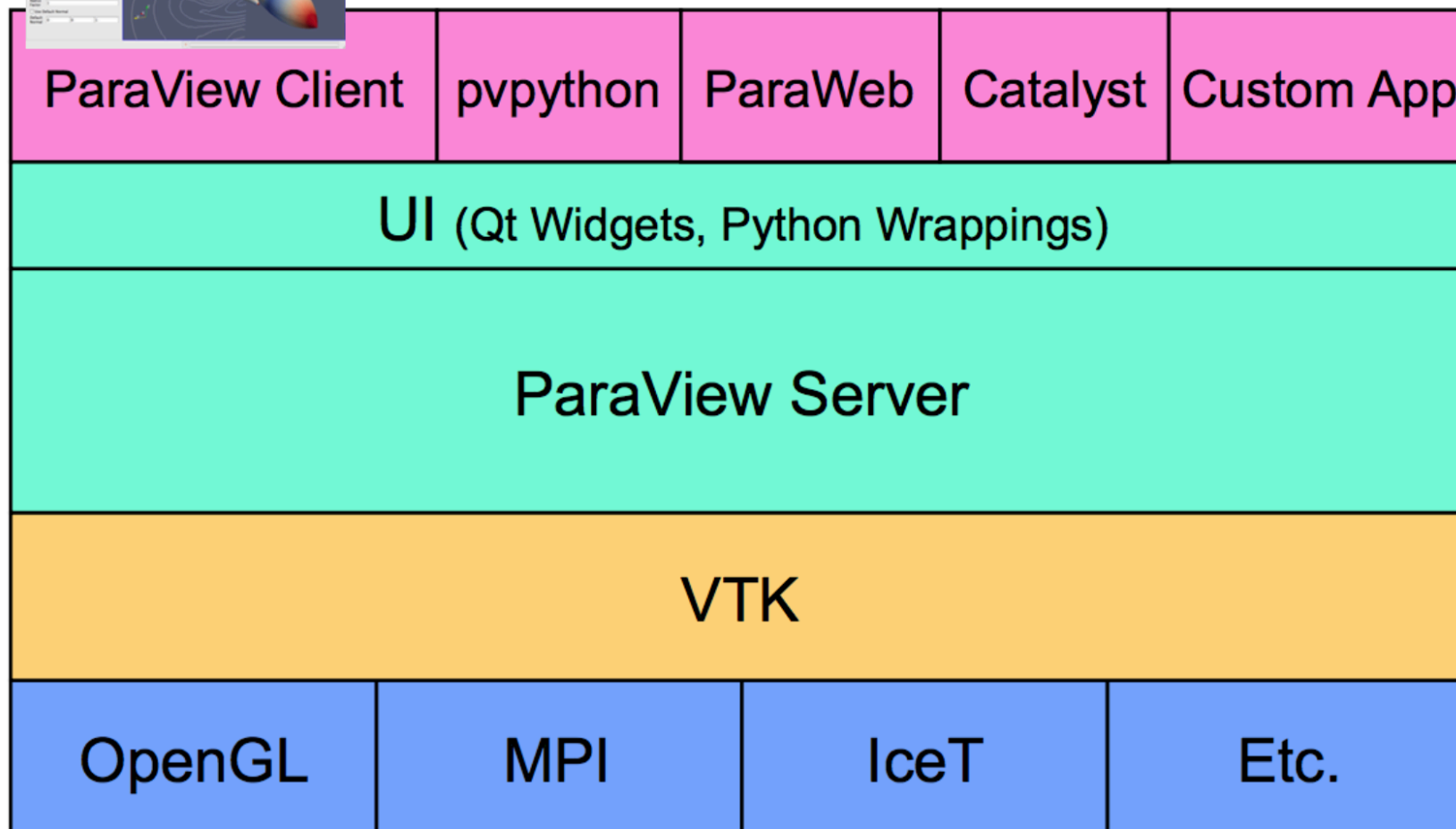
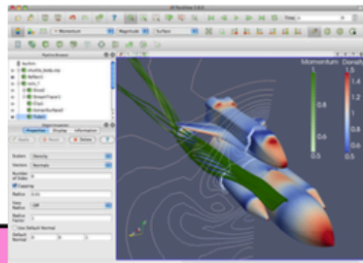


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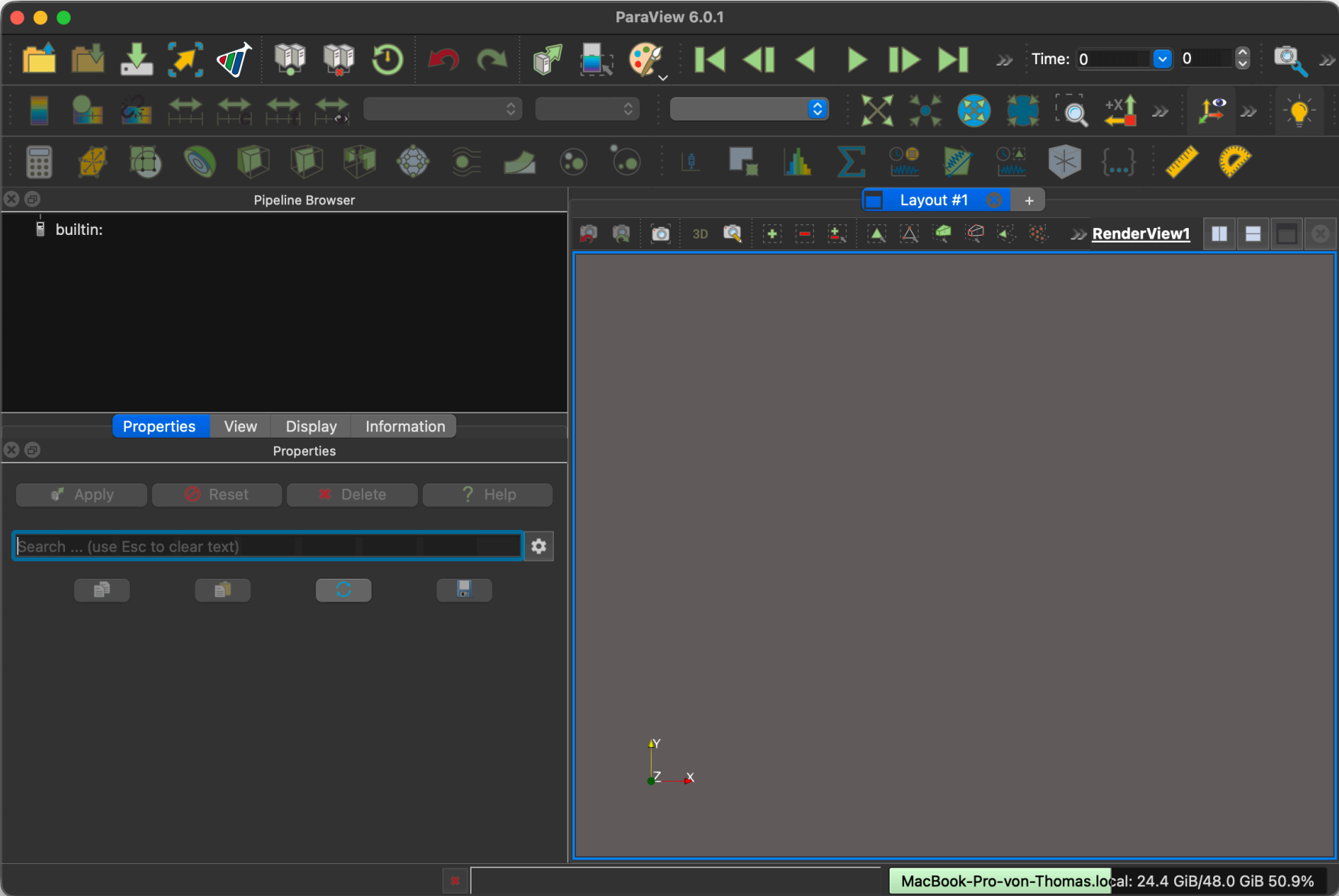
Source: Paraview Tutorial Slides



# ParaView Architecture



# Basic Interaction



# Loading the data



Properties Information

Apply Paset Delete Help

Search ... (use Esc to clear text)

Properties ( [ ] [ ] [ ] [ ]

Meshes [ ]

- Mesh
- Mesh2D
- PointMesh

Materials [ ]

- 1 air
- 2 chrome

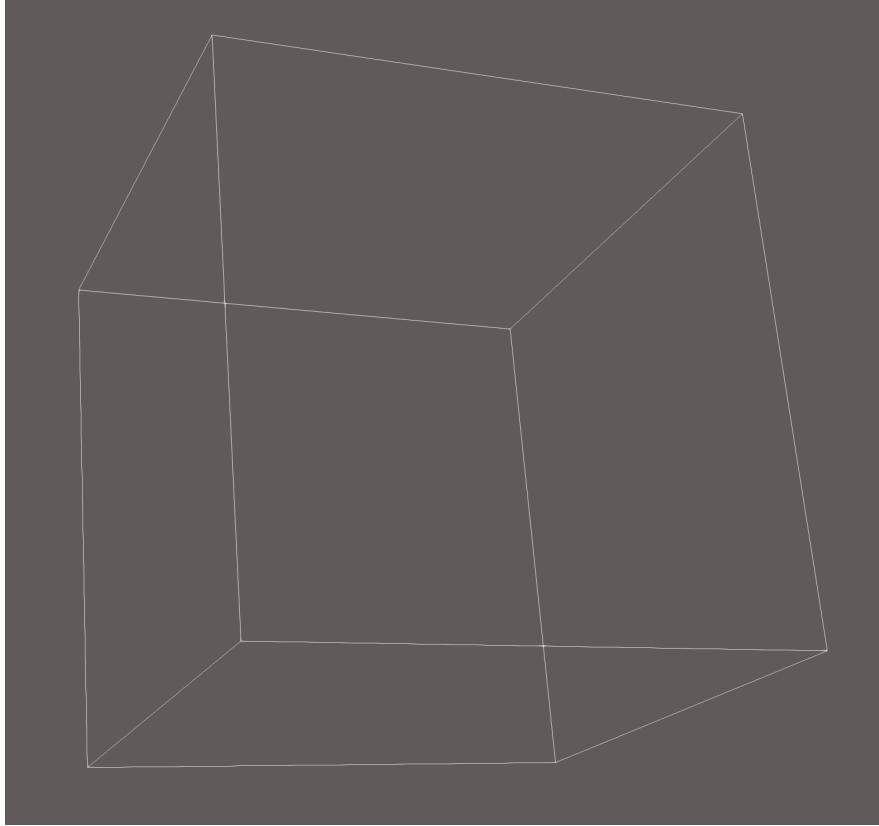
Cell Arrays [ ]

- airVf
- airVfGradient
- chromeVf

Point Arrays [ ]

- PointVar
- grad
- hardyglobal
- hgslice

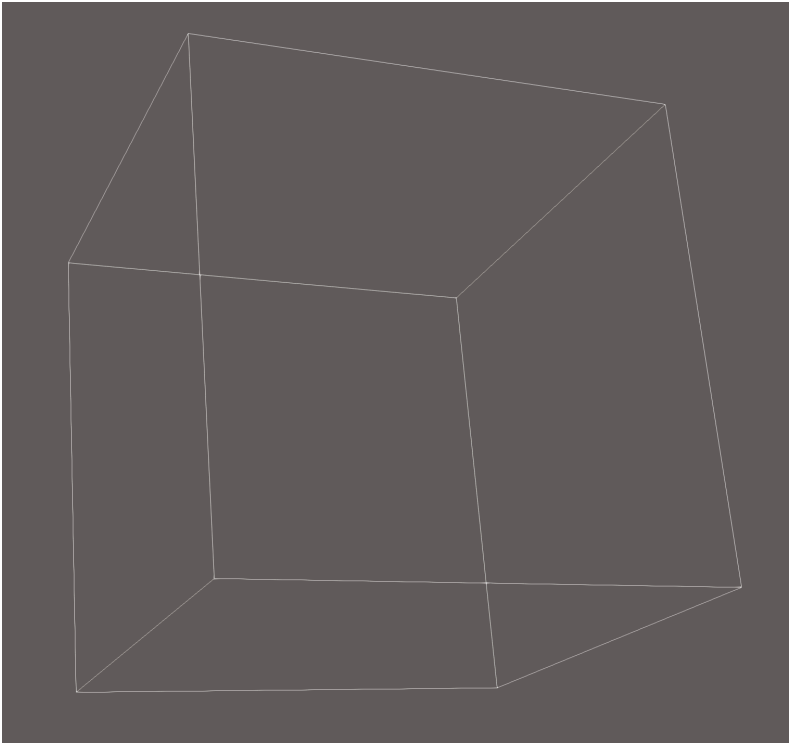
Hit apply



# Changing the representation



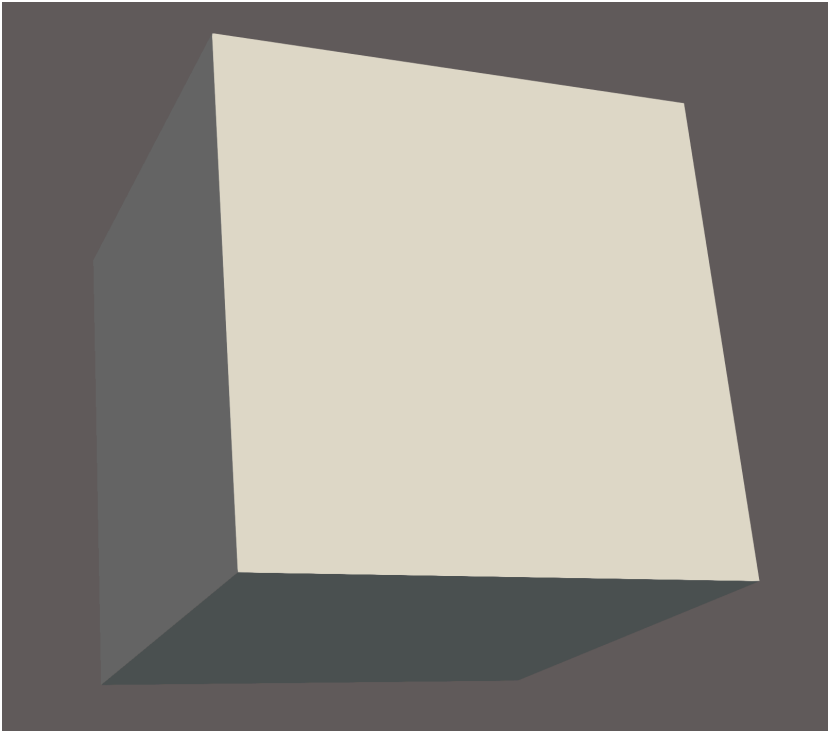
Representation **Outline**



Representation **Surface**

Coloring

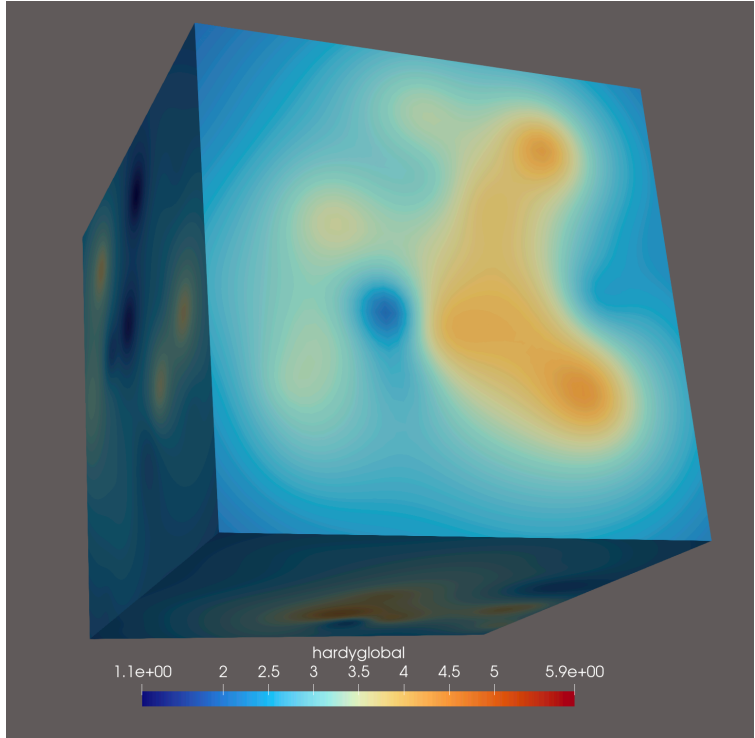
● Solid Color



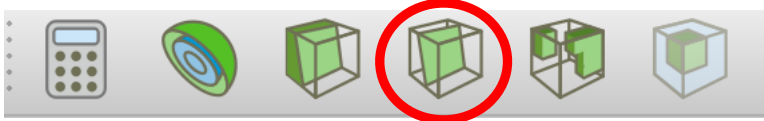
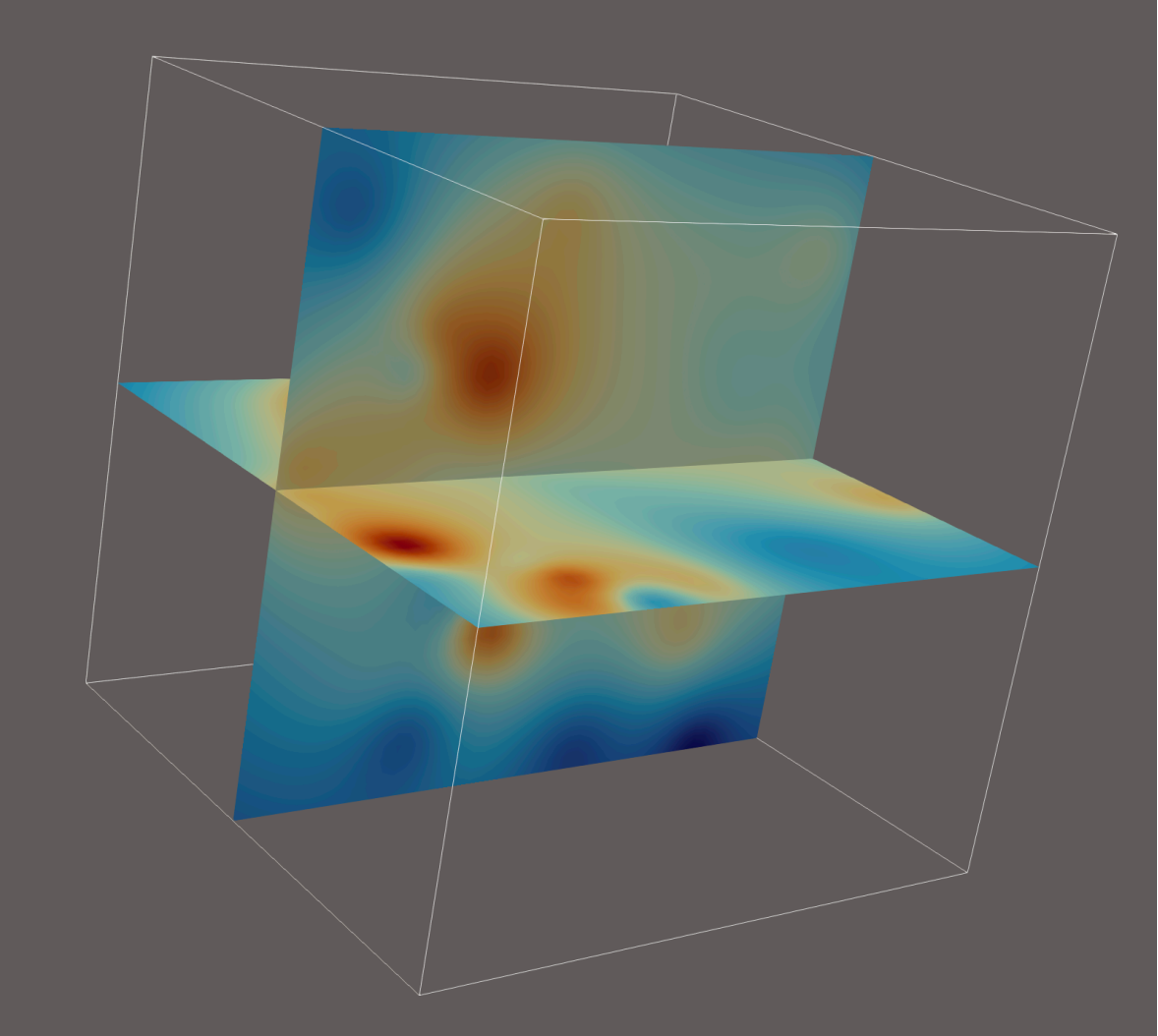
Representation **Surface**

Coloring

● hardyglobal

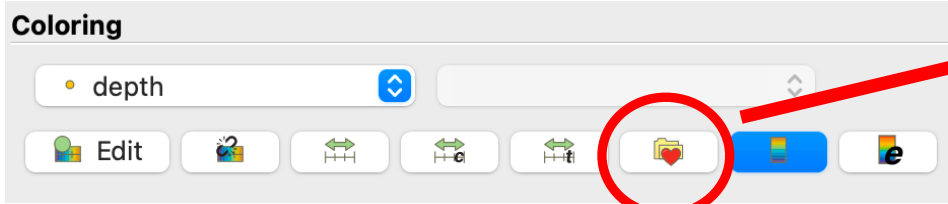


# Slicing

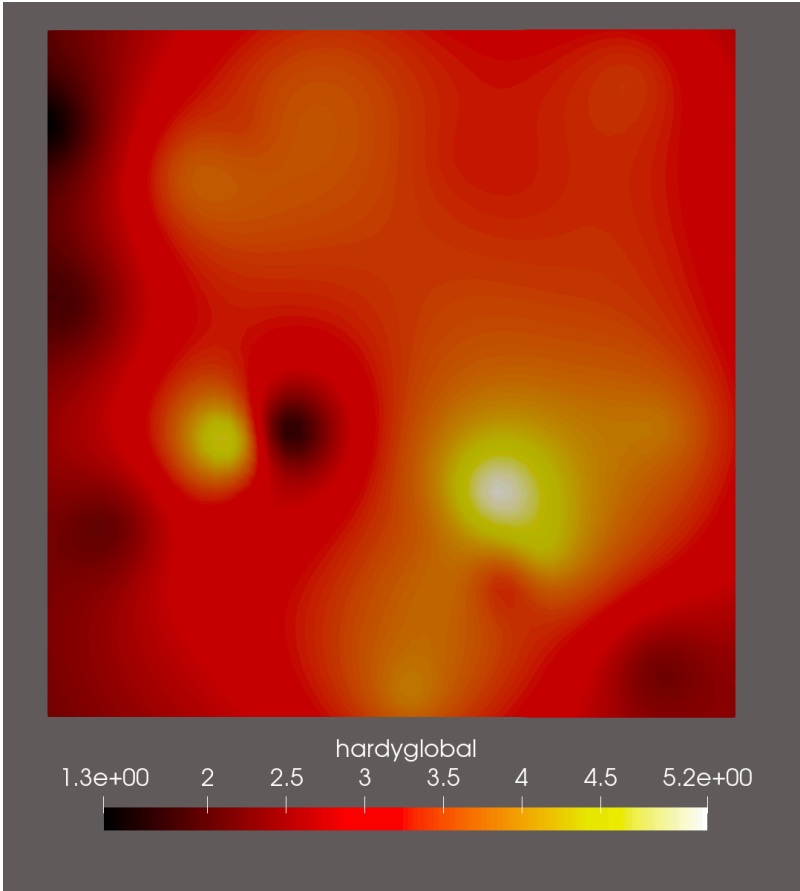
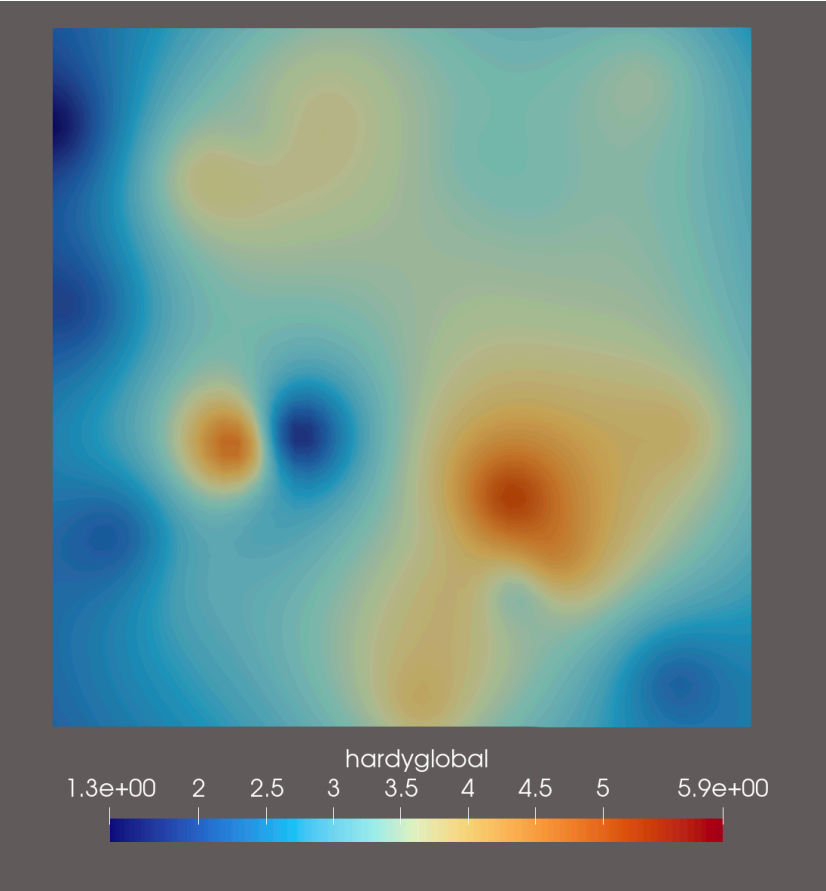


# Colormaps

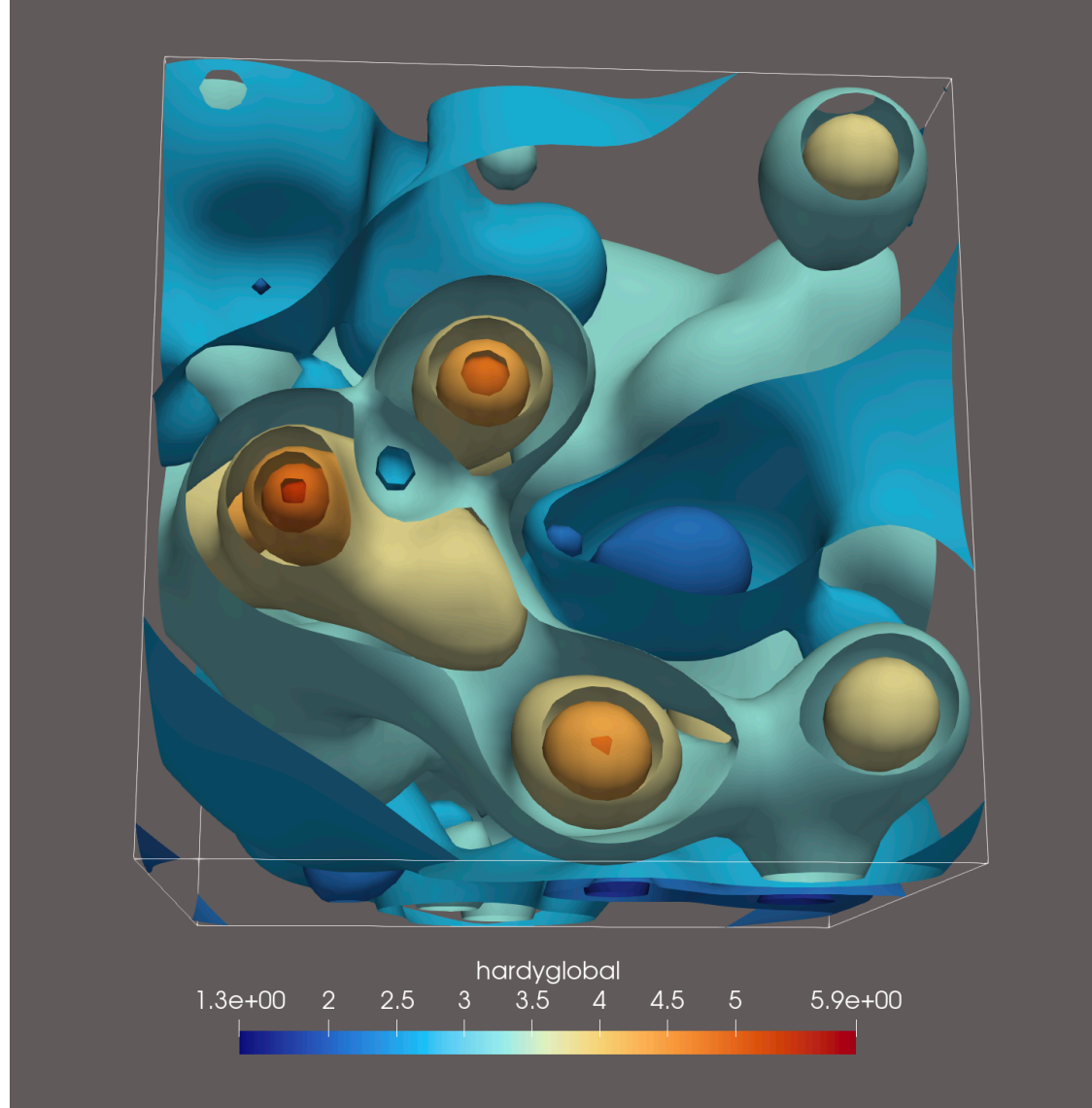
In the Display tab:



Choose preset



# • Contouring



# Volume Rendering



Pipeline Browser

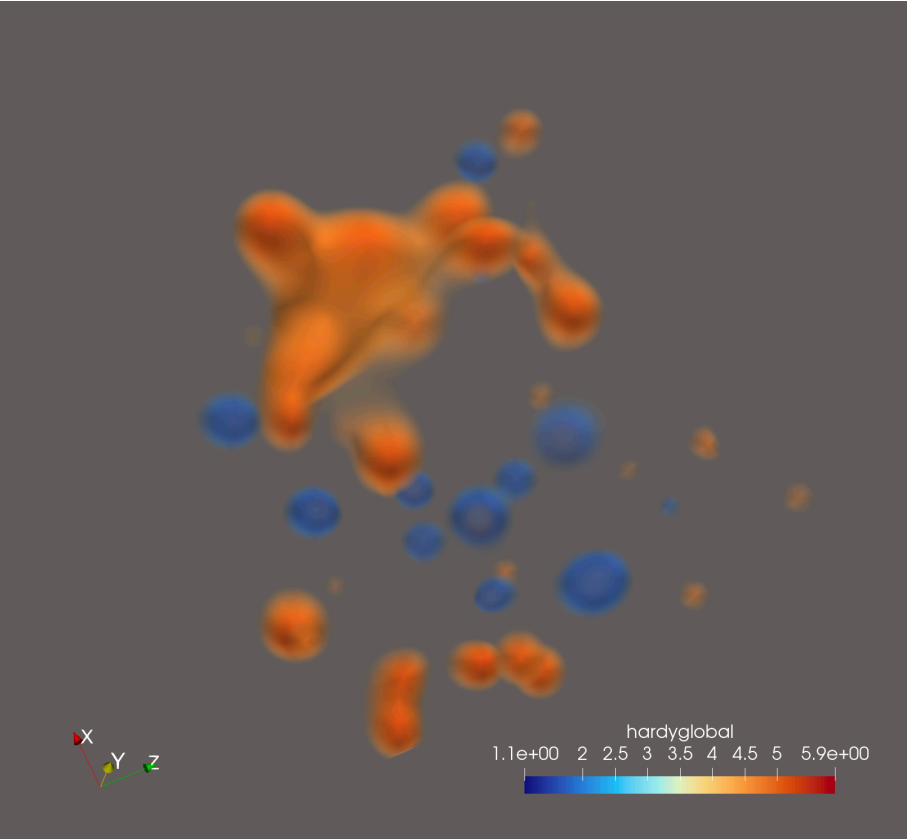
- builtin:
- noise.silo
- MergeBlocks1
- ResampleToImage1

Representation Volume

Coloring

hardyglobal

Edit [Icons]



1.333: 0.000 Range : (1.09554, 5.88965)

- Enable Freehand Drawing Of Opacity Transfer Function
- Enable Opacity Mapping For Surfaces
- Use Log Scale When Mapping Data To Opacity
- Use Log Scale When Mapping Data To Colors



# The ParaView GUI and Features

- Screenshots
- Saving and loading states
- Multiple linked views
- ...