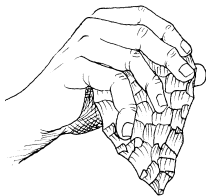


Hands on Paraview

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Tool Seminar, AG Mehrmann

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- 1 Getting Started
- 2 Use of Paraview
- 3 vtk file format

Get the tool

Paraview is open source, see the webpage www.paraview.org to find

- binaries for direct installation
- source code or
- the git repositories with the source code

Documentation

Use the internet and in particular for Paraview `www.paraview.org`

- webinars
- wiki
- books for sale

and for the vtk format

- `www.vtk.org`
- `file-formats.pdf`

Or just start

- Install paraview
- > open > any .vtk file
- and press APPLY

Scalar and Vector Data

Create subsets of the data and apply filters. . . e.g.

- Scalar
 - cutting lines or surfaces
 - iso lines or surfaces

- Vector (like velocities)
 - stream lines
 - streak lines

Visualization and Export

Visualization

- choose from a large variety of rendering opportunities
 - shading
 - legends, axes, colormaps
- screenshots can be directly exported

If there is a bunch of files like `name_timestep.vtk`,
Paraview recognizes them as a time series

→ Use your filters and export a movie

Legacy Formats

The legacy format – easy to read and write

- Simple serial format, ASCII or binary
- containing native information: coordinates, celltypes, data
- there is also a XML format

Basic structure (Example)

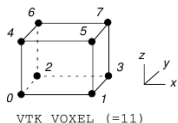
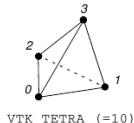
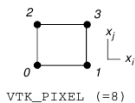
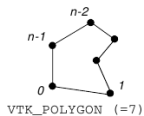
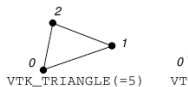
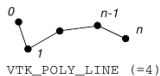
- ① # vtkDataFile Version 3.0 – file version and identifier
- ② name of the problem
- ③ ASCII or binary – file format
- ④ DATASET UNSTRUCTURED_GRID
POINTS 114 float
... – dataset structure, geometry and topology
- ⑤ CELL_DATA 84
SCALARS rho float 1 – dataset attributes

Minimal Example

```

# vtk DataFile Version 3.0
stirrer block 4
ASCII
DATASET UNSTRUCTURED_GRID
POINTS 5 float
0 0 0
1 0 0
1 1 0
0 1 0
0.5 1.3 0
CELLS 2 9
4 0 1 3 2
3 2 4 3
CELL_TYPES 2
8
5
CELL_DATA 2
SCALARS rho float 1
LOOKUP_TABLE default
1.456543e-01
3.586839e-01

```



Please send me your 'something2vtk' files and I will make them available
Thank you!