



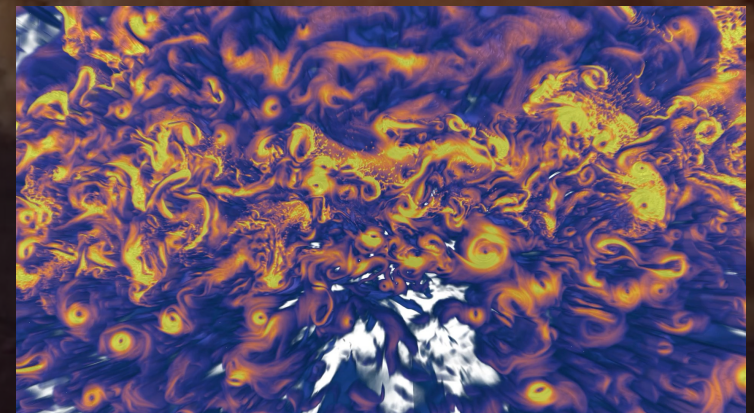
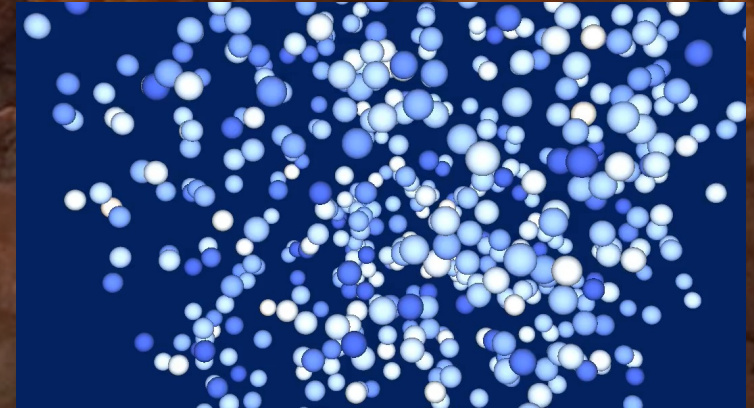
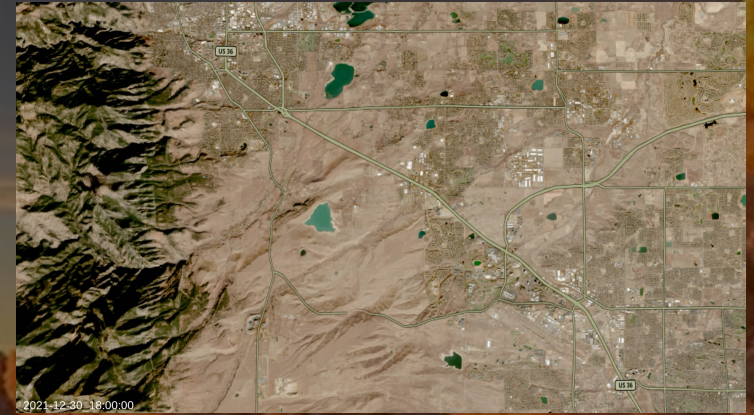
[vapor.ucar.edu](http://vapor.ucar.edu)

[github.com/NCAR/VAPOR](https://github.com/NCAR/VAPOR)

**Graphical Interface**

**Python API**

**Comprised of 11 algorithms  
we call "Renderers"**





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[github.com/NCAR/VAPOR](https://github.com/NCAR/VAPOR)

**Make it easy for  
Geophysical Scientists**

**~3 FTE Software  
Engineers/Scientists**

Linux



18/20/22



CentOS7



MacOS

arm64/x86

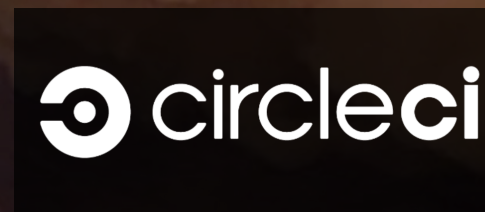


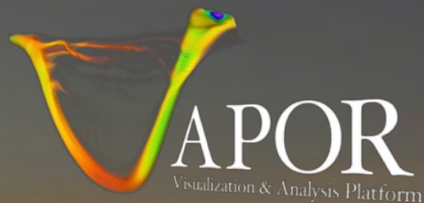
Windows

MinGW? WSL?

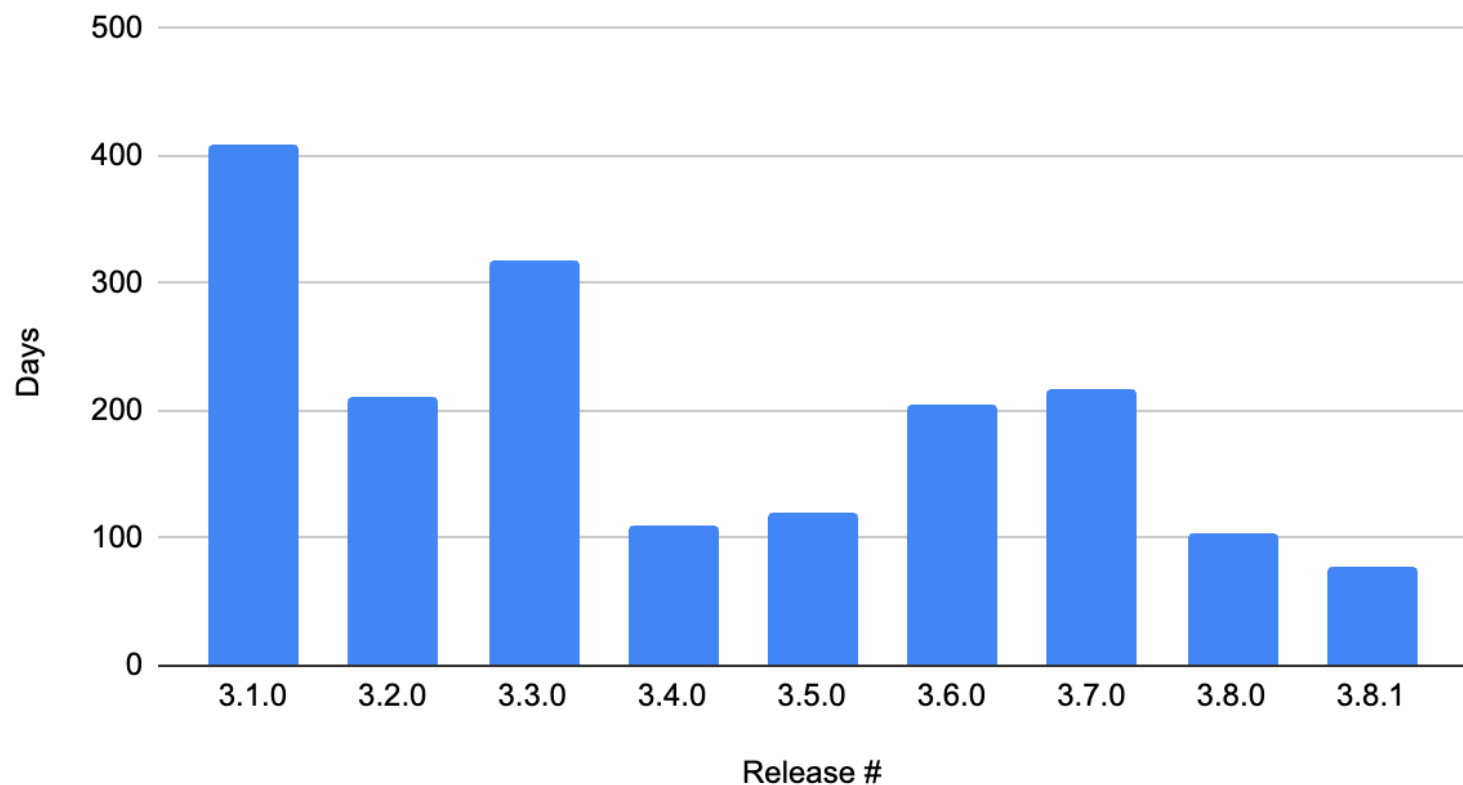


**CONDA**

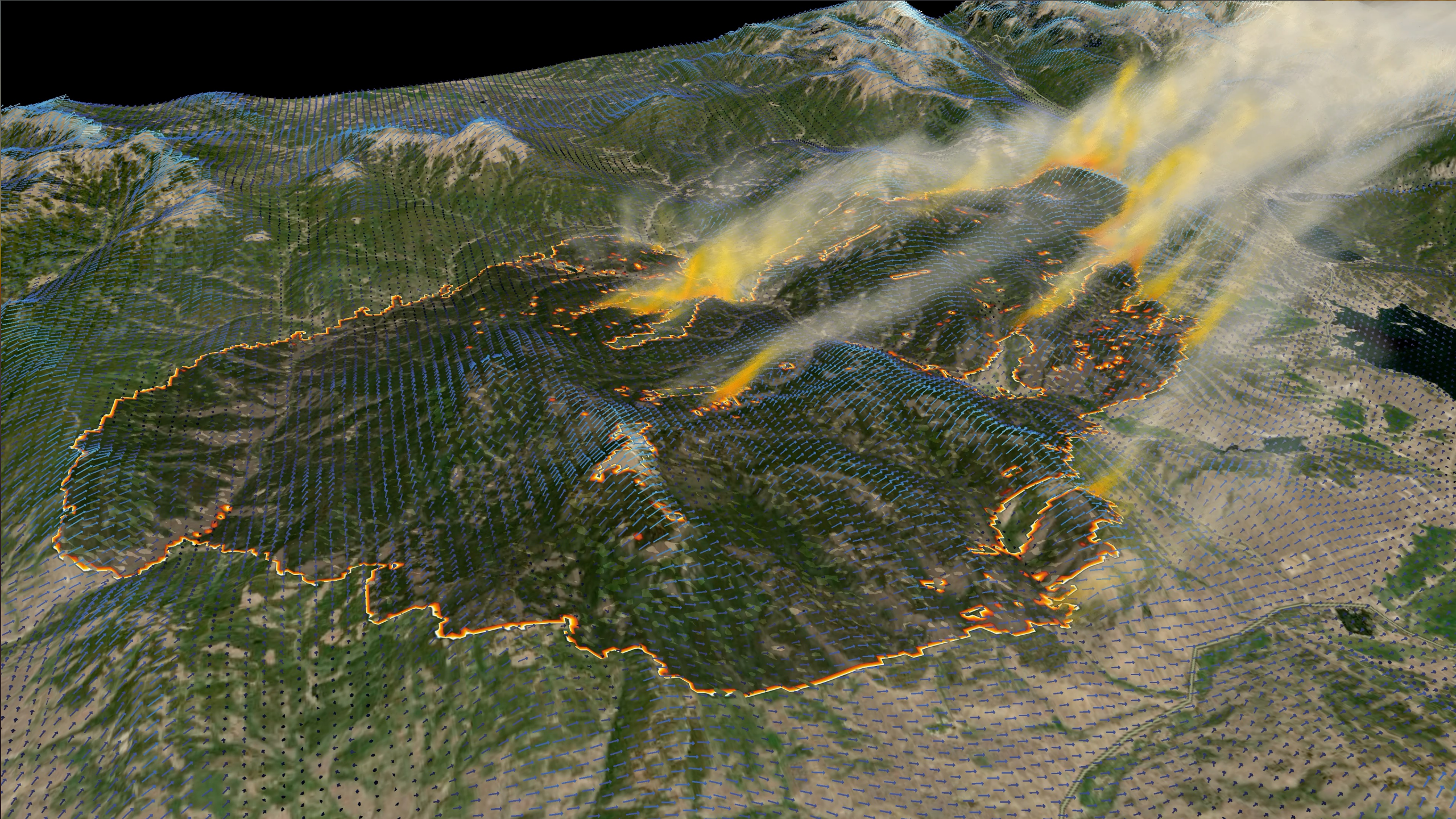




Days between Vapor 3.X releases



**M1 Support**  
**GPU support**  
**SSH debugging**

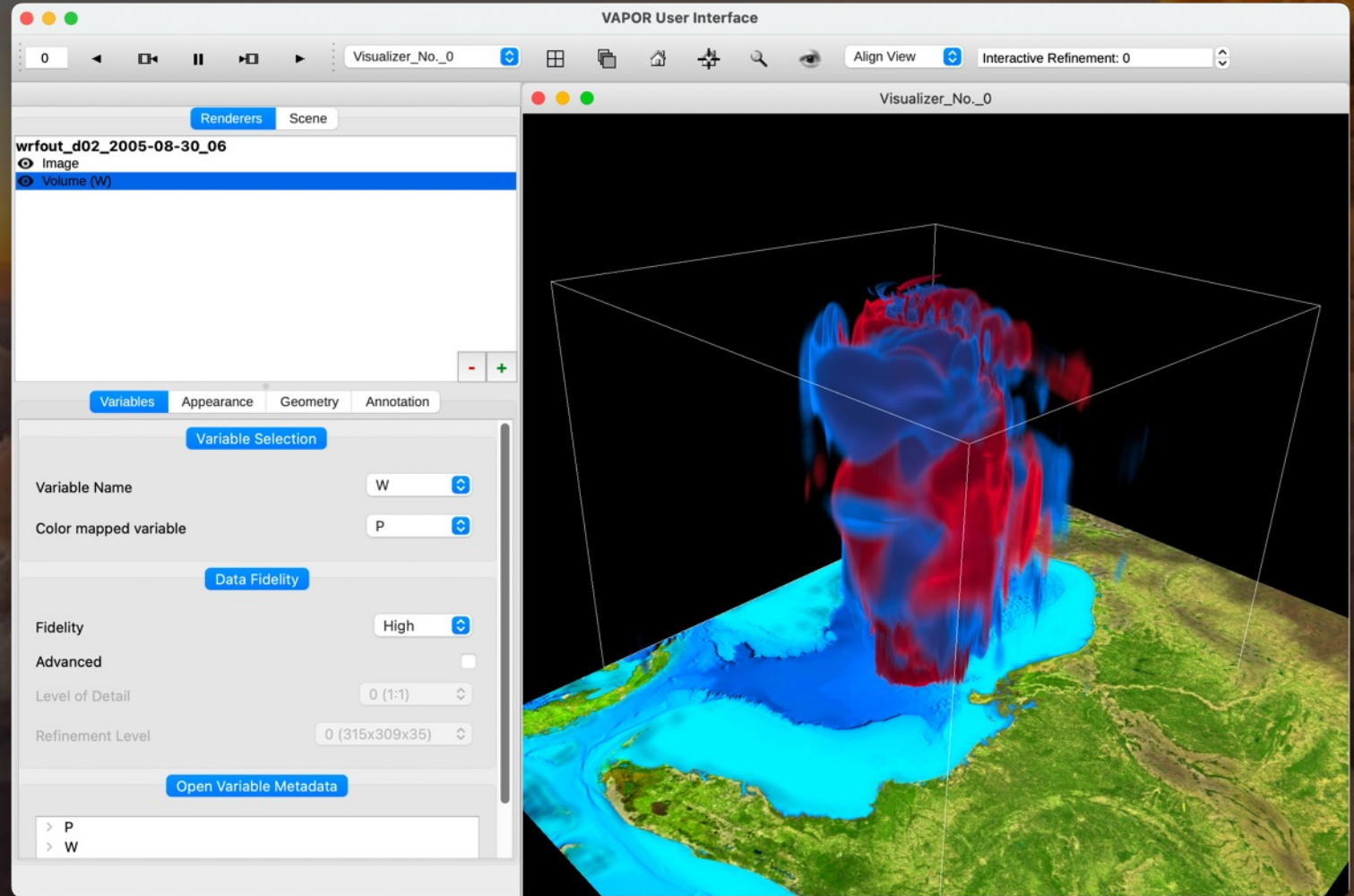




**Unmodified  
Fuels**

**AI Modified  
Fuels**

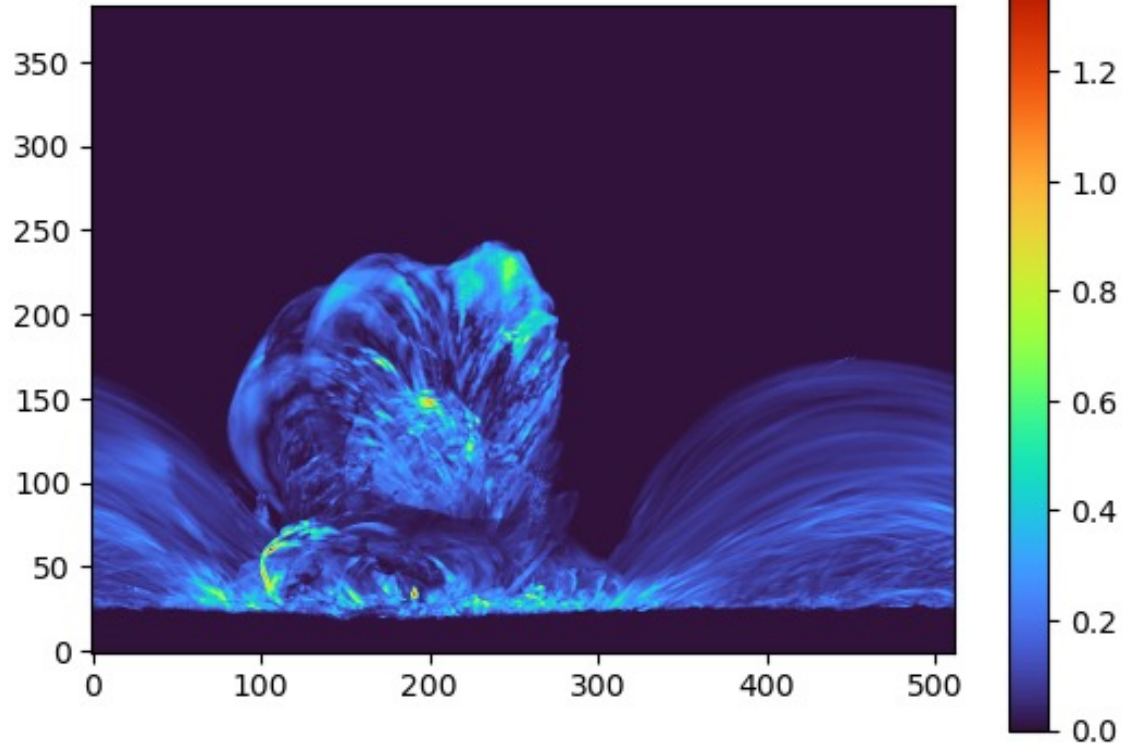
NetCDF-CF  
WRF-ARW  
Particle Data  
Brick of Values  
UGRID  
MPAS  
VDC



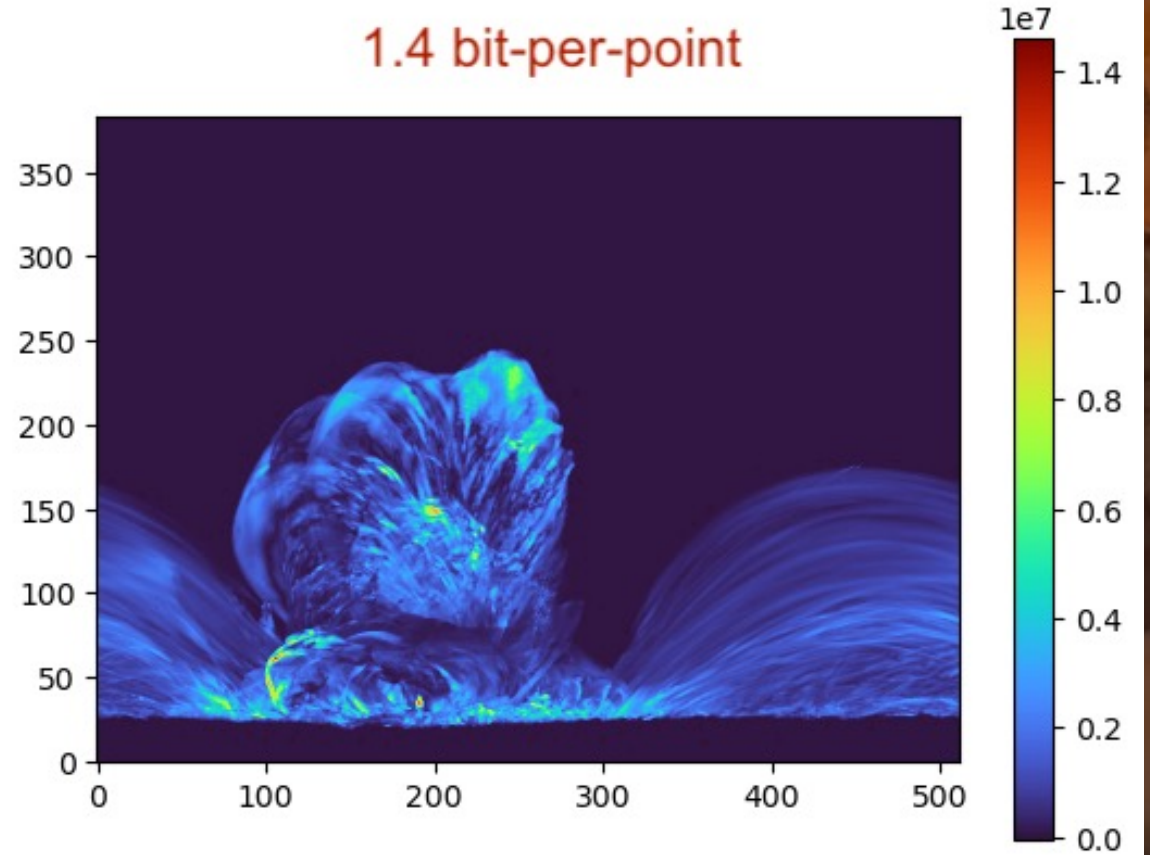
# SPERR

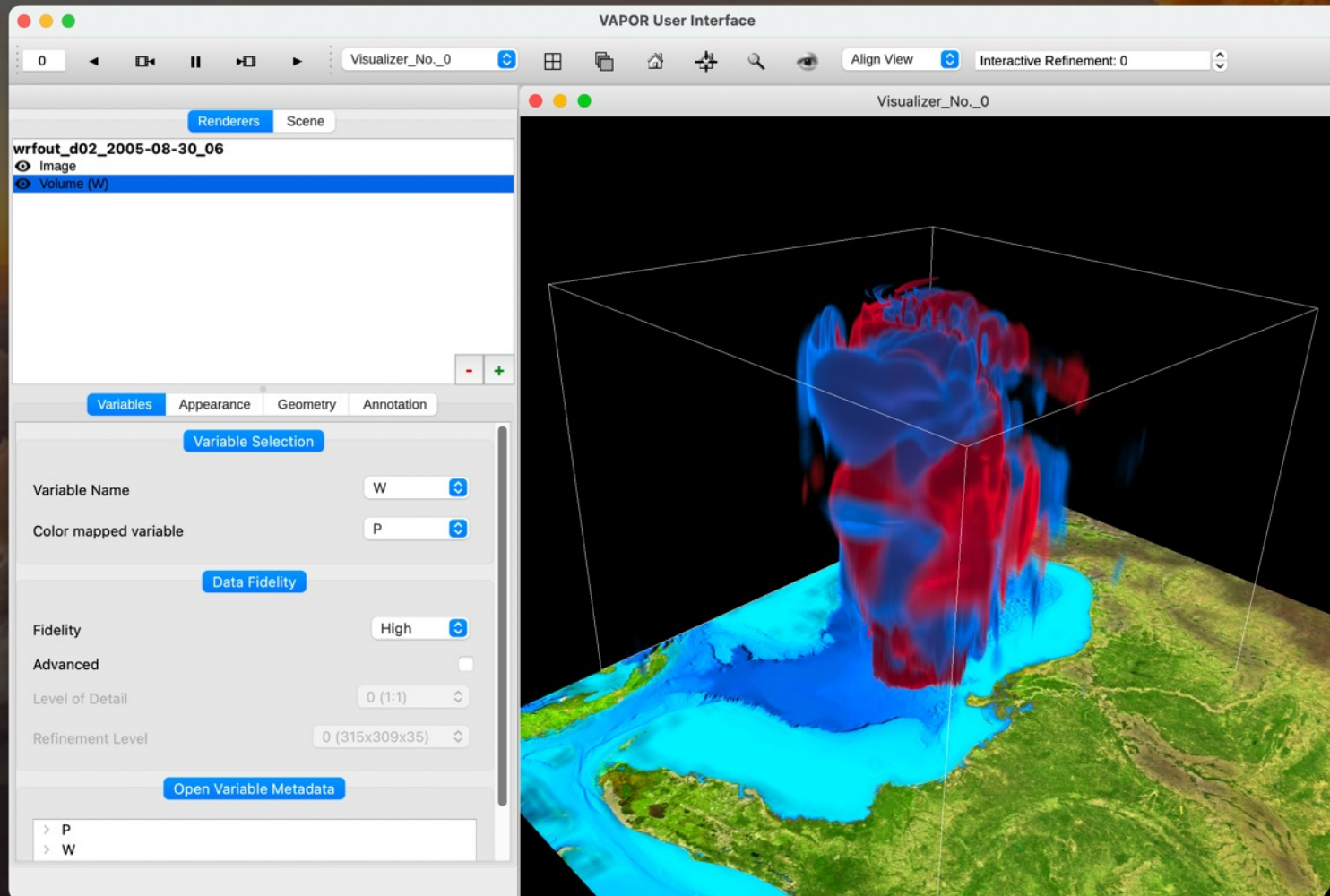
<https://github.com/NCAR/SPERR>

32 bit-per-point



1.4 bit-per-point







# Renderer Table



The screenshot displays the VAPOR User Interface. The main window, titled 'Visualizer\_No\_0', shows a 3D visualization of a storm system over a geographic map. The storm is rendered with a color gradient from blue at the base to red at the top, indicating intensity. The interface includes a 'Renderers' panel on the left, which is currently showing 'wrfout\_d02\_2005-08-30\_06' with 'Image' and 'Volume (W)' options. Below the renderers panel, there are tabs for 'Variables', 'Appearance', 'Geometry', and 'Annotation'. The 'Variables' tab is active, showing 'Variable Selection' with 'Variable Name' set to 'W' and 'Color mapped variable' set to 'P'. The 'Data Fidelity' section shows 'Fidelity' set to 'High', 'Advanced' checked, 'Level of Detail' set to '0 (1:1)', and 'Refinement Level' set to '0 (315x309x35)'. At the bottom, there is an 'Open Variable Metadata' button and a list of variables: '> P' and '> W'.

# Renderer Table



VAPOR User Interface

0 ◀ ▶ ⏪ ⏩

Renderers Scene

wrfout\_d02\_2005-08-30\_06

- Image
- Volume (W)

Variables Appearance Geometr

Region

X -1050021.50

Y 2123337.00

Z 31.61409

Copy region from render

Renderer Vis0:wrfout\_d02\_2005-08-30\_06

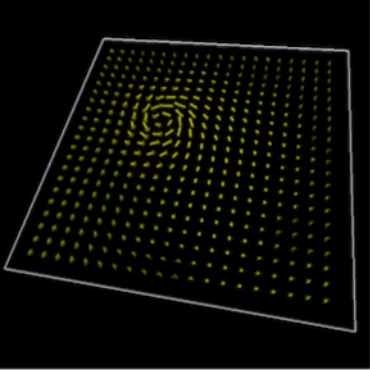
Transform

Translate	X	0.00000	Y	0.00000
Scale	X	1.00000	Y	1.00000
Origin	X	-420811.2812!	Y	2737270.25

Data Source: wrfout\_d02\_2005-08-30\_06

Renderer Name:

- Barb
- Contour
- Flow
- Image
- IsoSurface
- Model
- Particle
- Slice
- TwoDData
- Volume
- WireFrame



**Barb Renderer**

Displays an array of arrows with the users domain, with custom dimensions that are defined by the user in the X, Y, and Z axes. The arrows represent a vector whose direction is determined by up to three user-defined variables.

Barbs can have a constant color applied to them, or they may be colored according to an additional user-defined variable.

Cancel OK

# Renderer Table

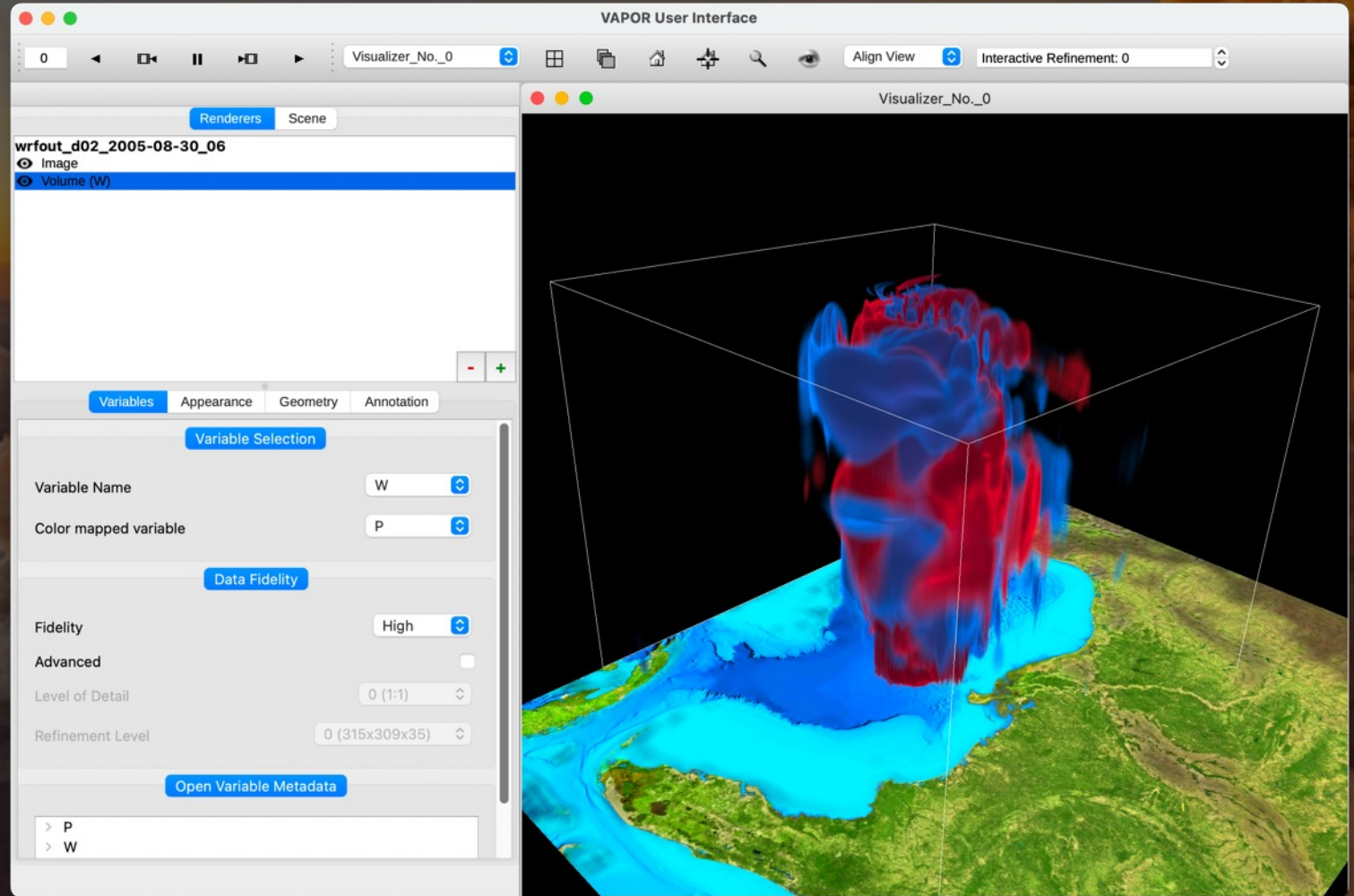


The screenshot displays the VAPOR User Interface. The main window, titled 'Visualizer\_No\_0', shows a 3D visualization of a storm system over a geographic map. The storm is rendered with a color gradient from blue at the base to red at the top, indicating intensity. The map below shows the storm's location over a region of land and water.

The left panel, titled 'Renderers', shows a list of renderers for the scene 'wrfout\_d02\_2005-08-30\_06'. The 'Volume (W)' renderer is selected. Below the list, the 'Variables' tab is active, showing the following settings:

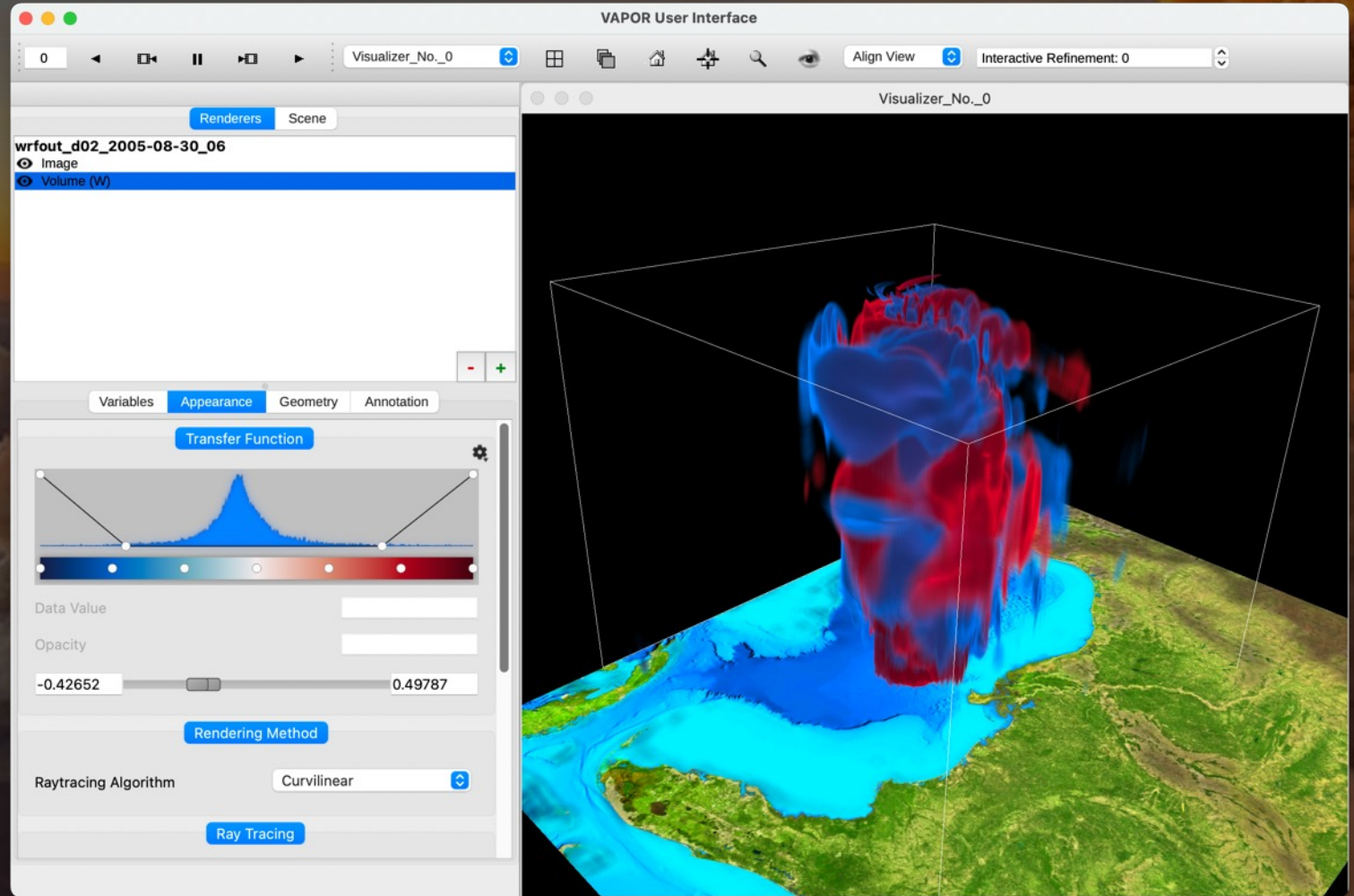
- Variable Selection**
  - Variable Name: W
  - Color mapped variable: P
- Data Fidelity**
  - Fidelity: High
  - Advanced:
  - Level of Detail: 0 (1:1)
  - Refinement Level: 0 (315x309x35)
- Open Variable Metadata**
  - > P
  - > W

# Variables = What



Variables = What

Appearance = How



Variables = What

Appearance = How

Geometry = Where

