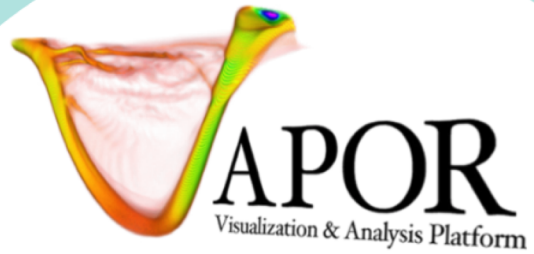


Press `esc` to exit full screen



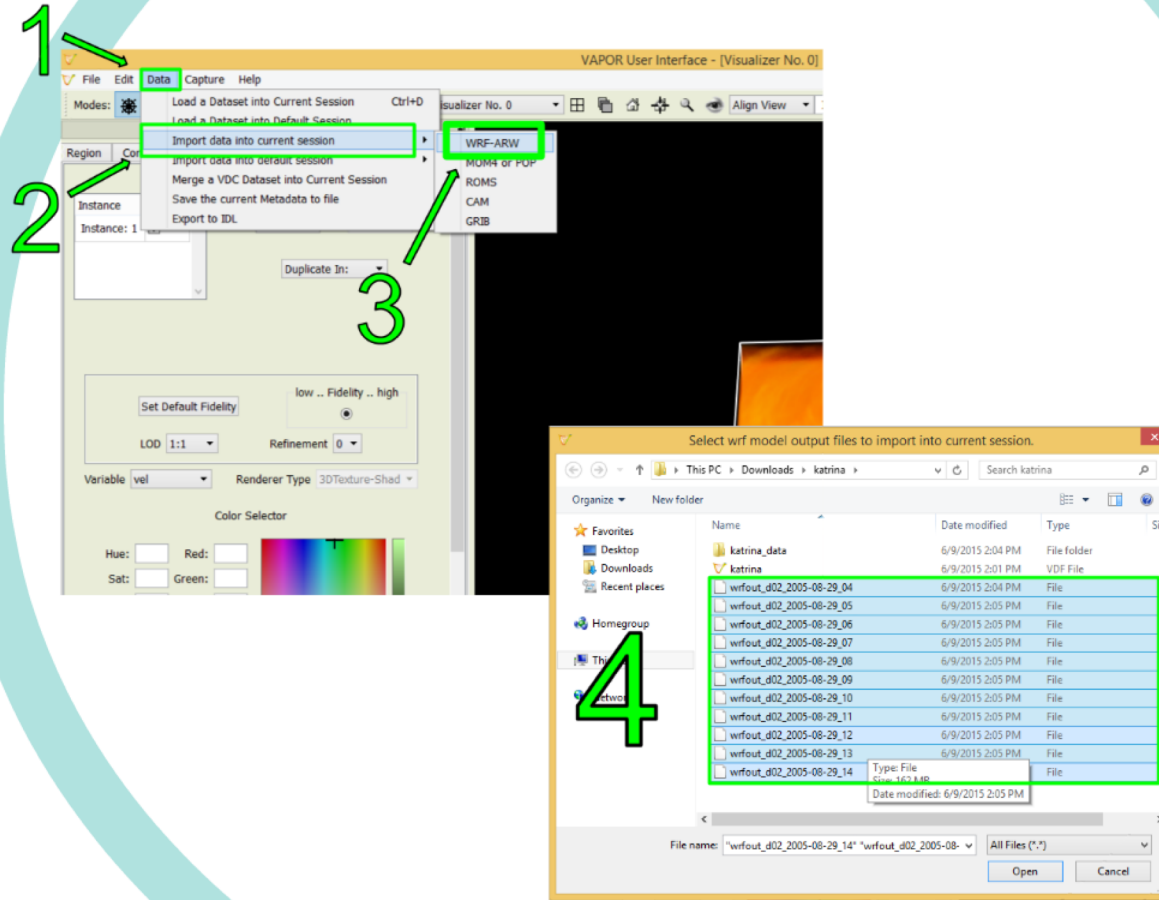
www.vapor.ucar.edu

Scott Pearse
NCAR/CISL
NCL/VAPOR Tutorial
2018

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Load Data



Navigate



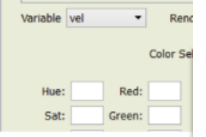
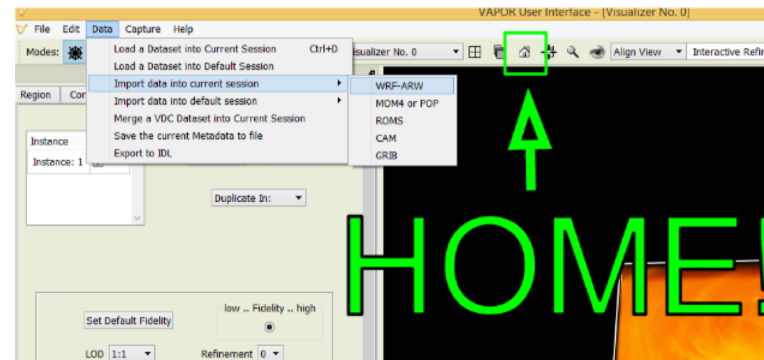
Rotate



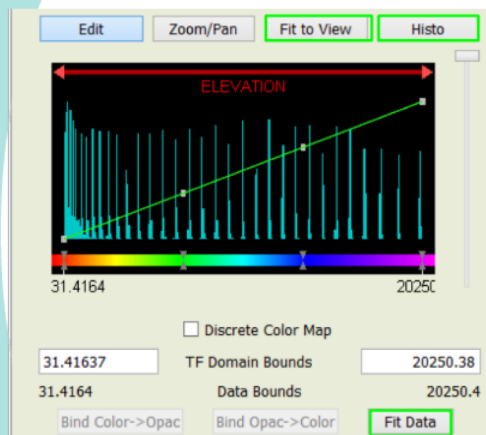
Zoom



Traverse



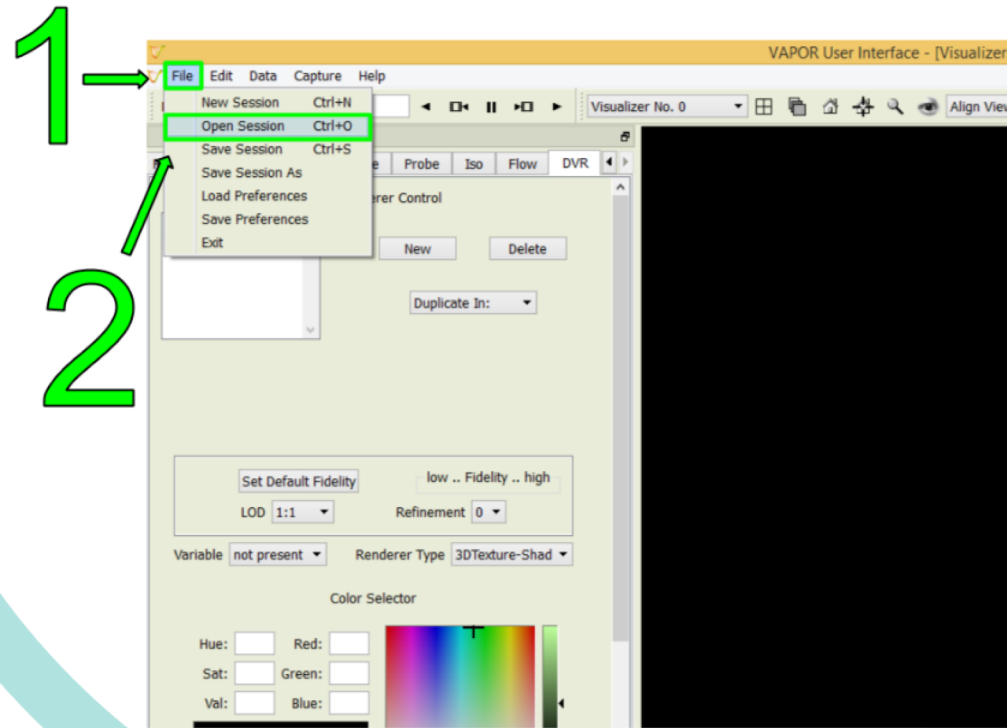
Volume Rendering



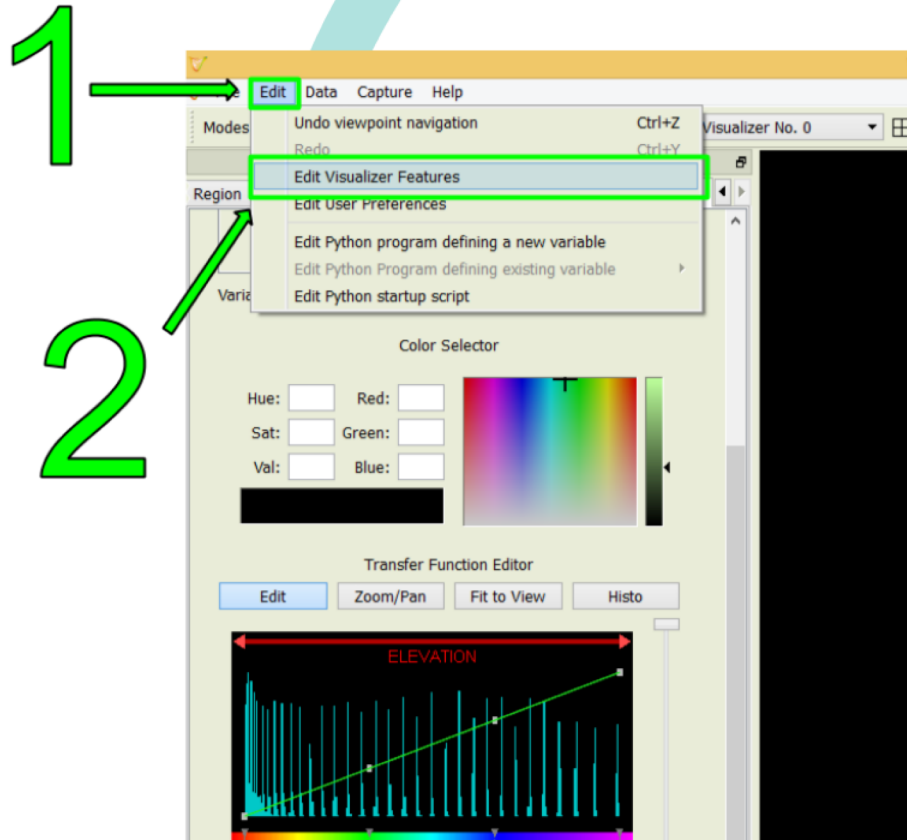
1

The main software interface shows a menu bar (File, Edit, Data, Capture, Help) and a toolbar with navigation controls. The 'Region' menu is open, showing options like Contours, 2D, Image, Probe, Iso, Flow, and DVR. The 'Renderer Control' panel includes an 'Instance' list with 'Instance: 1' selected, and buttons for 'New', 'Delete', and 'Duplicate In:'. Below this, there are settings for 'Set Default Fidelity' (low to high), 'LOD' (1:1), and 'Refinement' (0). The 'Variable' is set to 'ELEVATION' and the 'Renderer Type' is '3DTexture-Shad'. A 'Color Selector' is visible with Hue, Sat, Val, Red, Green, and Blue sliders. The 'Transfer Function Editor' panel is also visible, containing a histogram and various control buttons like 'Edit', 'Zoom/Pan', 'Fit to View', 'Histo', 'Load TF', 'Load Installed TF', 'Save TF', 'Bits per voxel' (8), and 'Histo scale' (1). A green arrow points from the 'Fit Data' button in the Transfer Function Editor to the 'Fit Data' button in the Transfer Function Editor panel.

If you fall behind,
Open a Session!



Context Options



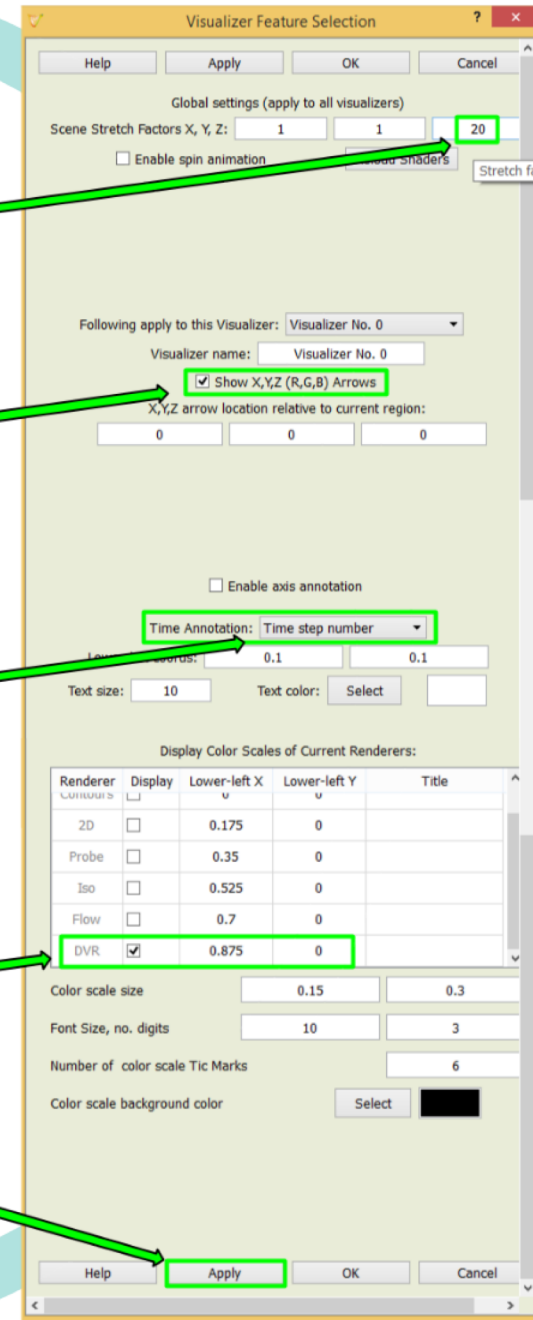
3

4

5

6

7



Terrain Image



6

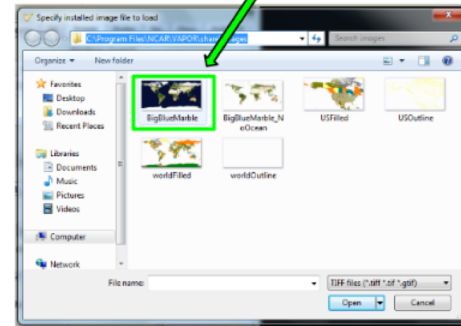
1

3

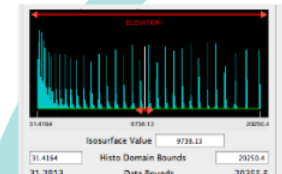
2

5

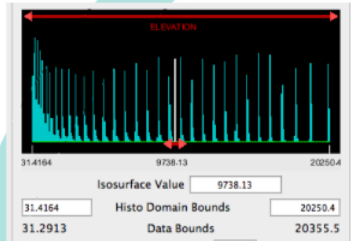
4



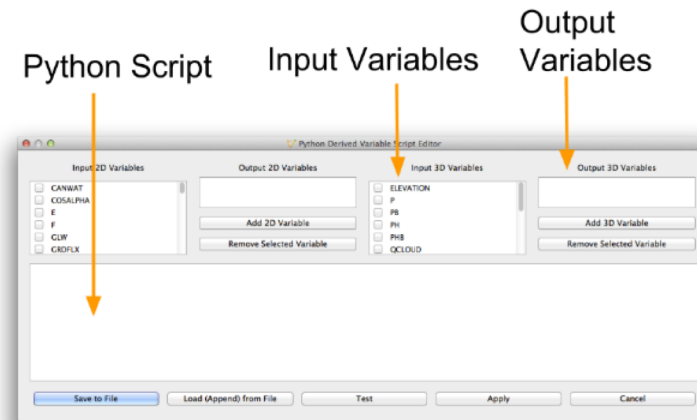
Isosurfaces



Isosurfaces



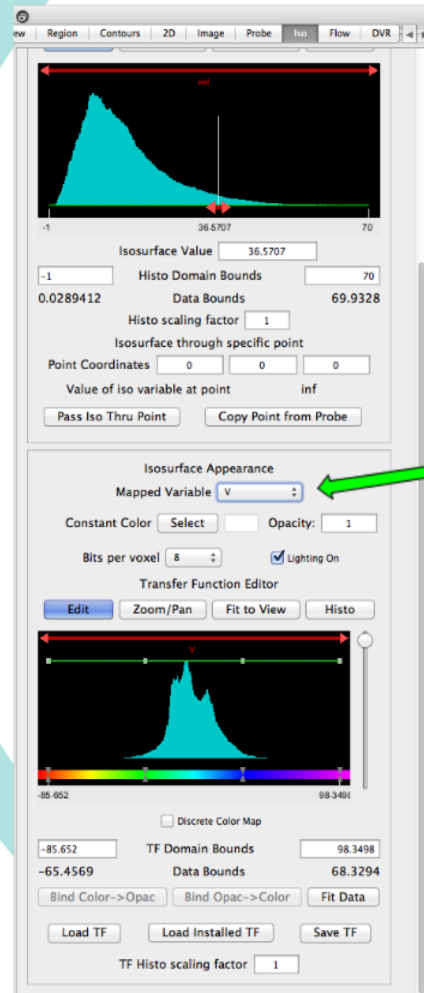
- > Edit
 - > Edit Python program defining a new variable



$$vel = \sqrt{U*U + V*V + W*W}$$

```
import vapor_wrf
dbz = vapor_wrf.DBZ(P, PB, QRAIN, 0, 0, T, QVAPOR)
```

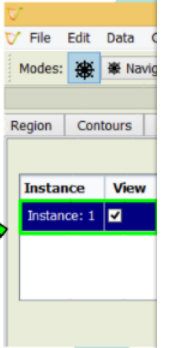
QVAPOR)



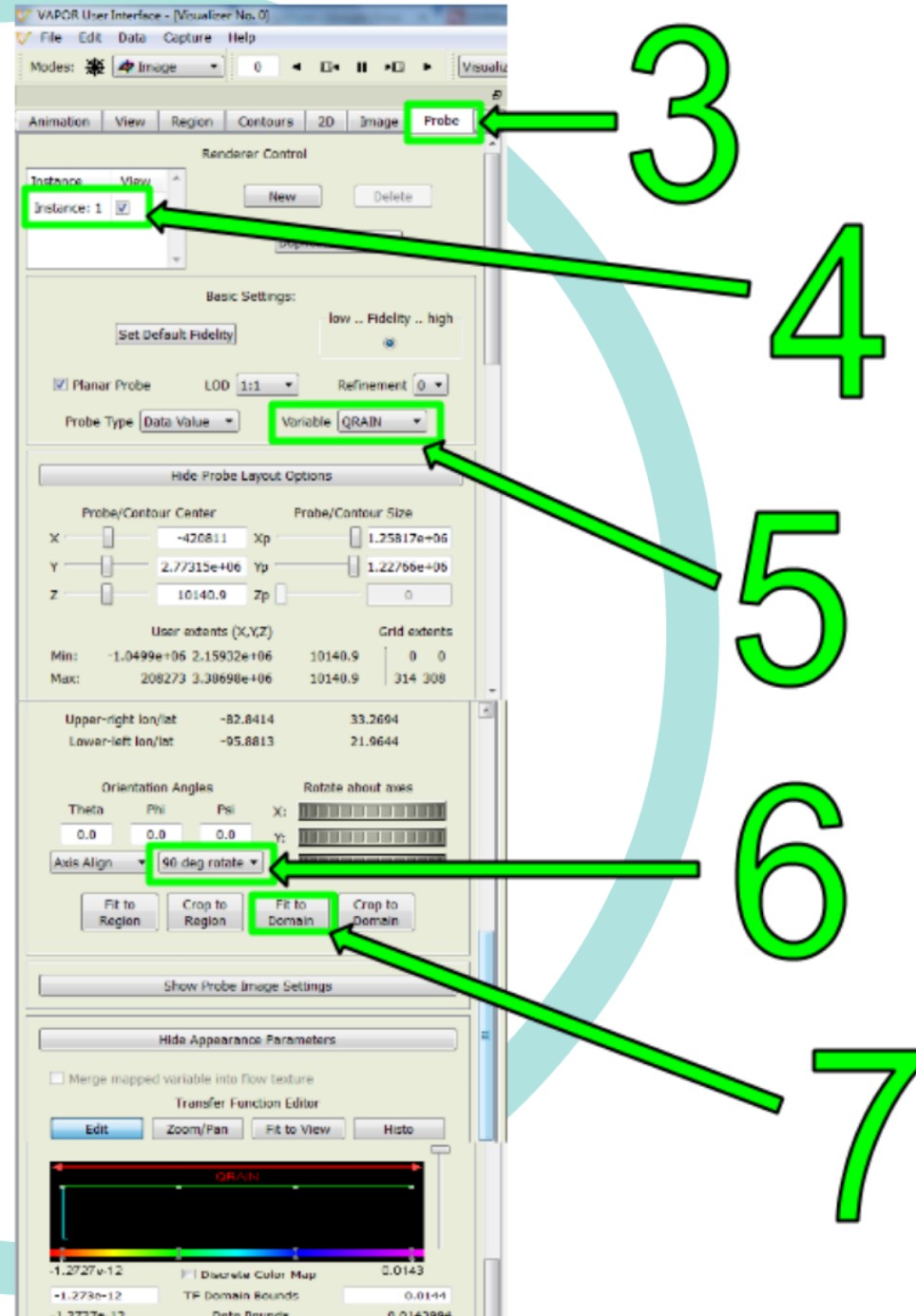
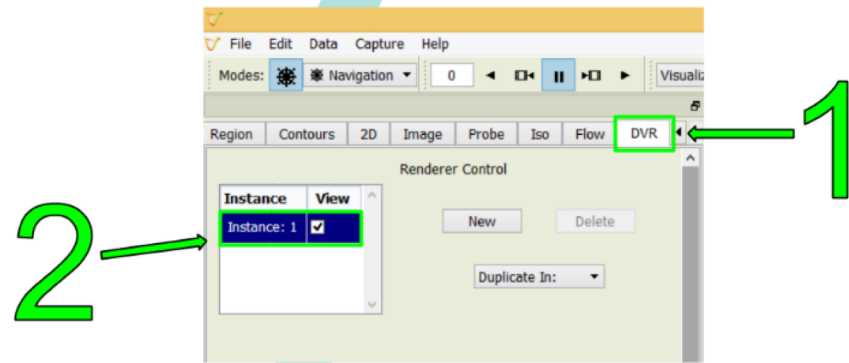
Coloring the Isosurface

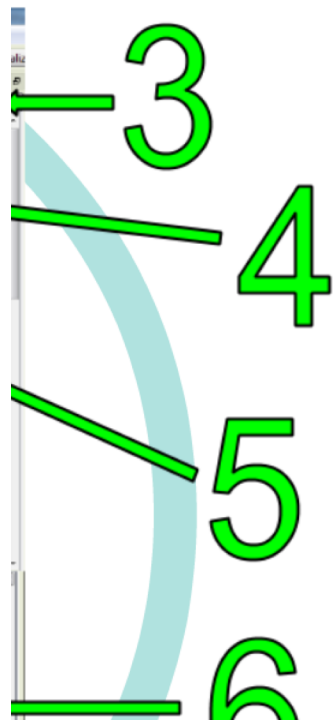
1 - Pick "v"

2



Probe Renderer





Barbs

VAPOR User Interface - [Visualizer No. 0]
File Edit Data Capture Help
Modes: Barb rake 0
Barbs
Renderer Control
Instance View
Instance: 1 [X] [New] [Delete] [Duplicate]
Basic Settings:
Set Default Fidelity low .. Fidelity .. high
Vars are: 3D LOD 1:1 Refinement 0
Velocity field U V W
Hide Barb Layout Options
Dimension Center Size
X -420811 1.25842e+06
Y 2.77315e+06 1.2279e+06
Z 1002.01 1941.19
Fit to Full Horizontal Data Extents
Dim X: 15 Y: 15 Z: 1
Align to XY grid: X-stride: 10 Y-stride: 10
Upper Right Lon/Lat -82.8401 33.2704
Lower Left Lon/Lat -95.8826 21.9633
Hide Appearance Options
Barb Color [Select] [Red]
Barb Thickness: 1
Barb Length scale factor: 2501.16

- 1
- 2
- 3
- 4
- 5

FLOW

Renderer Control

Instance	View
Instance: 1	<input checked="" type="checkbox"/>

New Delete

Duplicate In:

Basic Flow Parameters

Type:

low .. Fidelity .. high

Set Default Fidelity

LOD: Refinement: Accuracy:

Vector fields periodic in: X Y Z

unsteady field:

Unsteady Integration Direction:

Unsteady field scale factor:

Auto Flow Refresh

Hide Flow Seeding Settings

Rake center: Rake sizes

X: X:
Y: Y:
Z: Z:

seed count:

Seed Distrib. Field:

Seed Distribution Bias:

Unsteady Flow Time Settings

Seed time start, end, increment:

Timestep sample start, end, incr.:

Use time step list

Unsteady samples per time step:

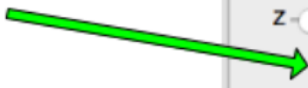
timestep display interval min, max:

1

2

3

4



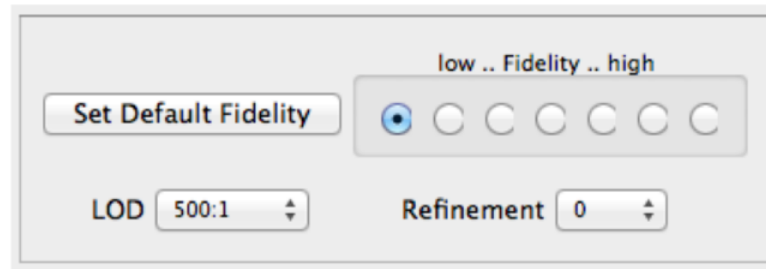
Vapor Data Collection (VDC)

Vapor can import:

- WRF - Weather Research and Forecast
- MOM - Modular Ocean Model
- POP - Parallel Ocean Program
- ROMS - Regional Ocean Modeling System
- GRIB - GRIdded Binary data format
- ICON/MPAS - Unstructured grids

But VDC is the most powerful

- > **Data**
 - > **Load dataset into current session**
 - > **Select katrina.vdf**



The screenshot shows a control panel with the following elements:

- A button labeled "Set Default Fidelity".
- A radio button group with the label "low .. Fidelity .. high" above it. The first radio button is selected.
- A dropdown menu for "LOD" with the value "500:1".
- A dropdown menu for "Refinement" with the value "0".