A brief history

SURA Modeling Testbed

How can we visualize FVCOM/SELFE/ADCIRC (unstructured grid) data?

commit 6d85c1e7d364c249b76a255236b1a3c77079d8d1
Author: unknown <ACrosby@.ASA.local>
Date: Mon Oct 10 09:28:55 2011 -0400

Initial Commit of the fvcom unstructured server
A brief history

Axiom

USGS

RPS

2011

2013

most likely to be the version you are running

March 2015

creation of sci-wms organization

May 2015

the great merge

July 2015

1.0

A brief history

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USGS

RPS

Axiom

2011

2013

most likely to be the version you are running
Improvements from 2013

- Projection support (RPS)
- Friendly interface (RPS/Axiom)
- Quickly add new datasets (RPS)
- Quickly visualize/troubleshoot datasets (RPS)
- REST endpoints to manage datasets (USGS)
- Rendering performance (RPS)
- Integration of access libraries (RPS/USGS)
- Style refactor (Axiom)
  - No more “contours_average_jet_0.13_5.60_None_node”
  - Simply “contours_jet” (similar to ncWMS)
- Easily extendable to new datasets (Axiom)
- Abstraction for easier growth - new visualization types (RPS/Axiom)
- Docker (Axiom)
Dataset Types

● Unstructured grids via pyugrid
  ○ fvcom
  ○ adcirc
  ○ selfe
  ○ delft3d

● SGRID via pysgrid (soon)
  ○ roms
  ○ pom

● Regular / rectilinear grids (soon after that)
  ○ satellite
Implementing a Dataset type

Subclass Dataset and implement required methods:

1. def getmap(self, layer, request)
2. def getlegendgraphic(self, layer, request)
3. def getfeatureinfo(self, layer, request)
4. def wgs84_bounds(self, layer)
5. def depths(self, layer)
6. def times(self, layer)
7. def has_cache(self)
8. def update_cache(self, force=False)
9. def clear_cache(self)
10. def humanize(self)

Example UnstructuredGrid dataset class: http://bit.ly/1LK1bJL
Visualization types

- Contours / Filled Contours
- Barbs / Vectors
- Rendering every gridcell (soon)
- ?
Implementing a Visualization Type

- Not as easy to add as a Dataset type, but possible!
- Tied closely with the type of Dataset

1. Implement your visualization [here](#) and return an HttpResponse (image, etc)

1. Add a case for your new viz type on each DatasetType that you want to support. [Example](#)
Looking forward

- Support ncWMS specific extensions
  - logscale / missing value color / number of contours
  - [http://www.resc.rdg.ac.uk/trac/ncWMS/wiki/WmsExtensions](http://www.resc.rdg.ac.uk/trac/ncWMS/wiki/WmsExtensions)
- Support ncWMS GetMetadata requests (a la Godiva2)
- Documentation (what’s that?)
- Support datasets that are NOT in WGS84 coordinates
- More