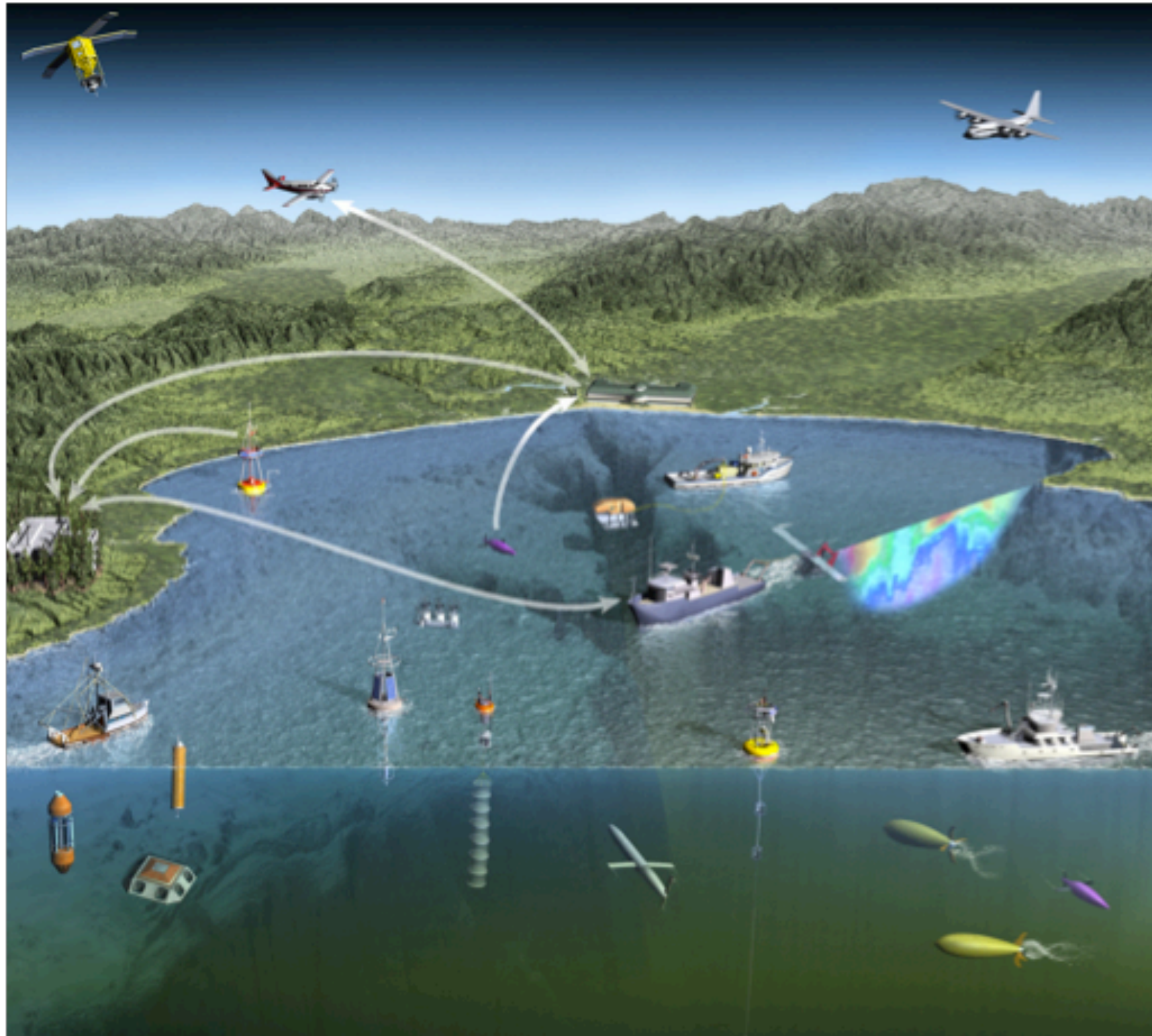# Ocean Sensor Data

Managing, Visualizing, and Understanding data using STOQS

16-17 September 2014
Environmental Disasters Data Management Workshop

Mike McCann
Monterey Bay Aquarium Research Institute
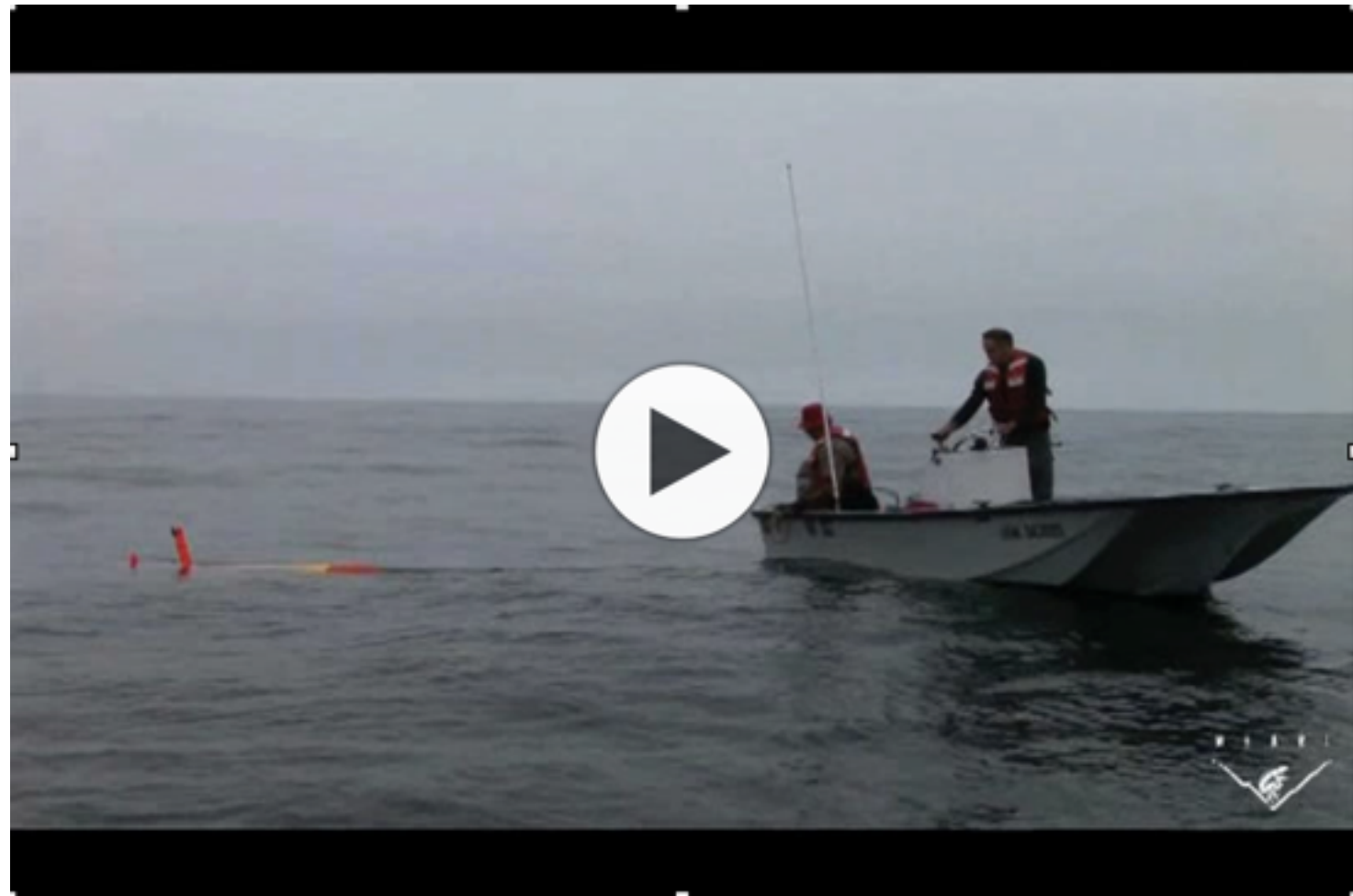
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Oceanographic Observations

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Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Data LDEO-Columbia, NSF, NOAA
Data CSUMB SFML, CA OPC

22.3 km

Google earth

Long Range AUV

- Mobile platform measures properties while moving through the water

- Seabird CTD, Wetlabs ECO, ISUS, Optode, ESP, …

- T, S, optical backscatter, chlorophyll, fluorescence, DO, nitrate, genetics, …

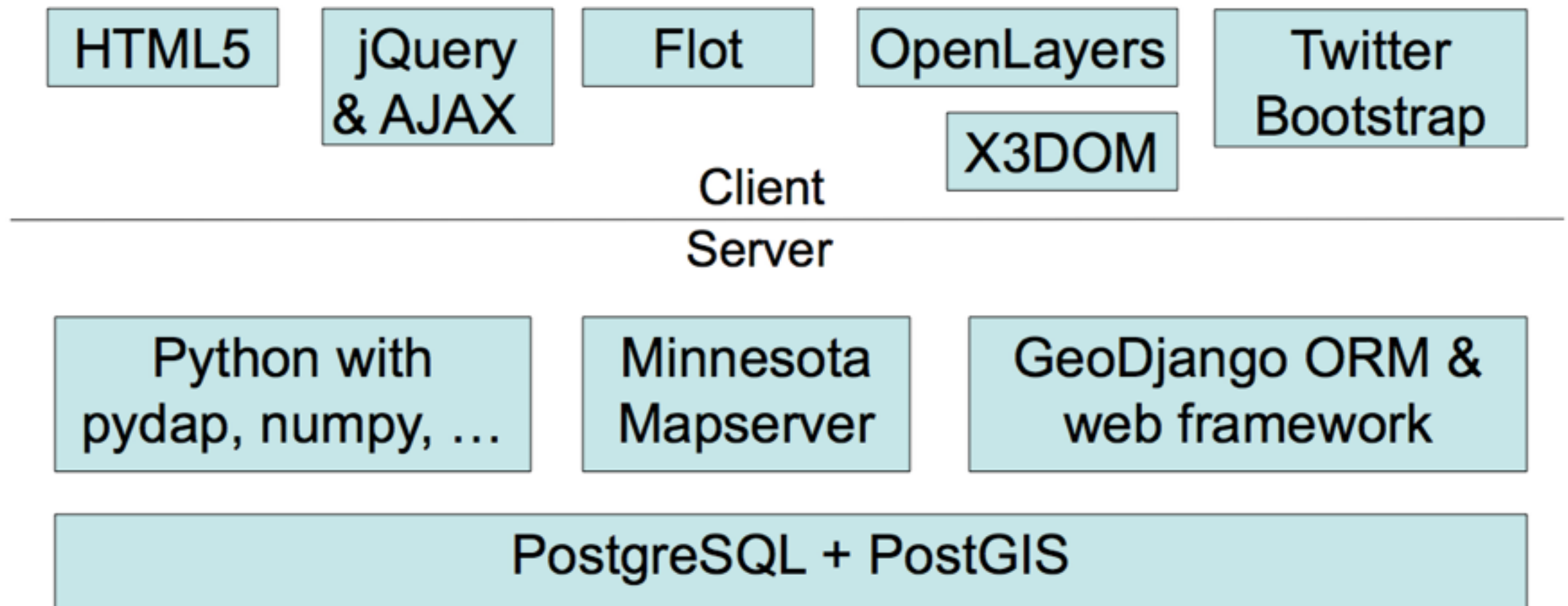- realtime and delayed mode

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Workflow

1. Install STOQS from <u>stoqs.googlecode.com</u>
2. Conduct missions that collect data
3. Create CF-NetCDF 1.6 files of the data
4. Construct STOQS load script
5. Create PostgeSQL database and run script
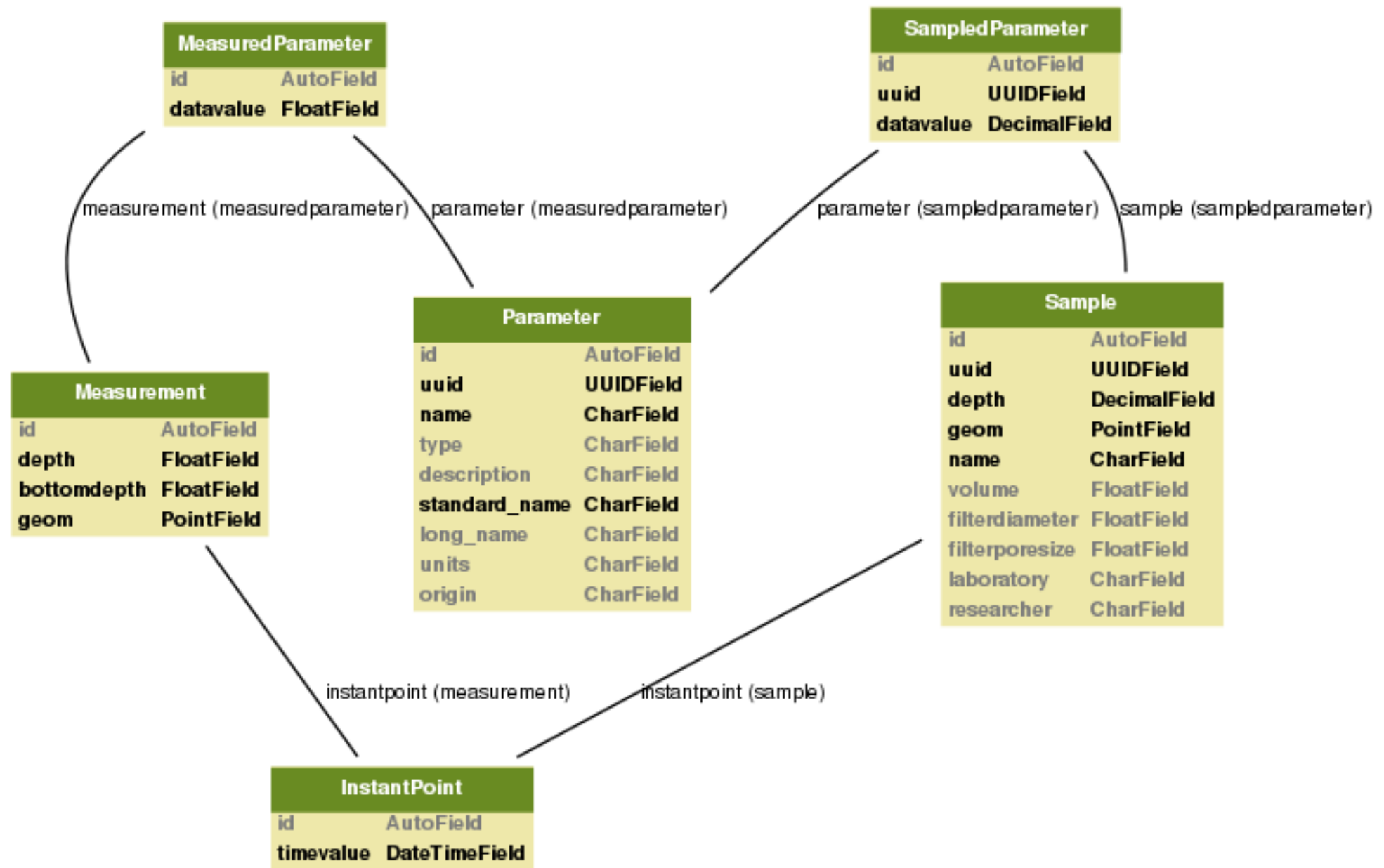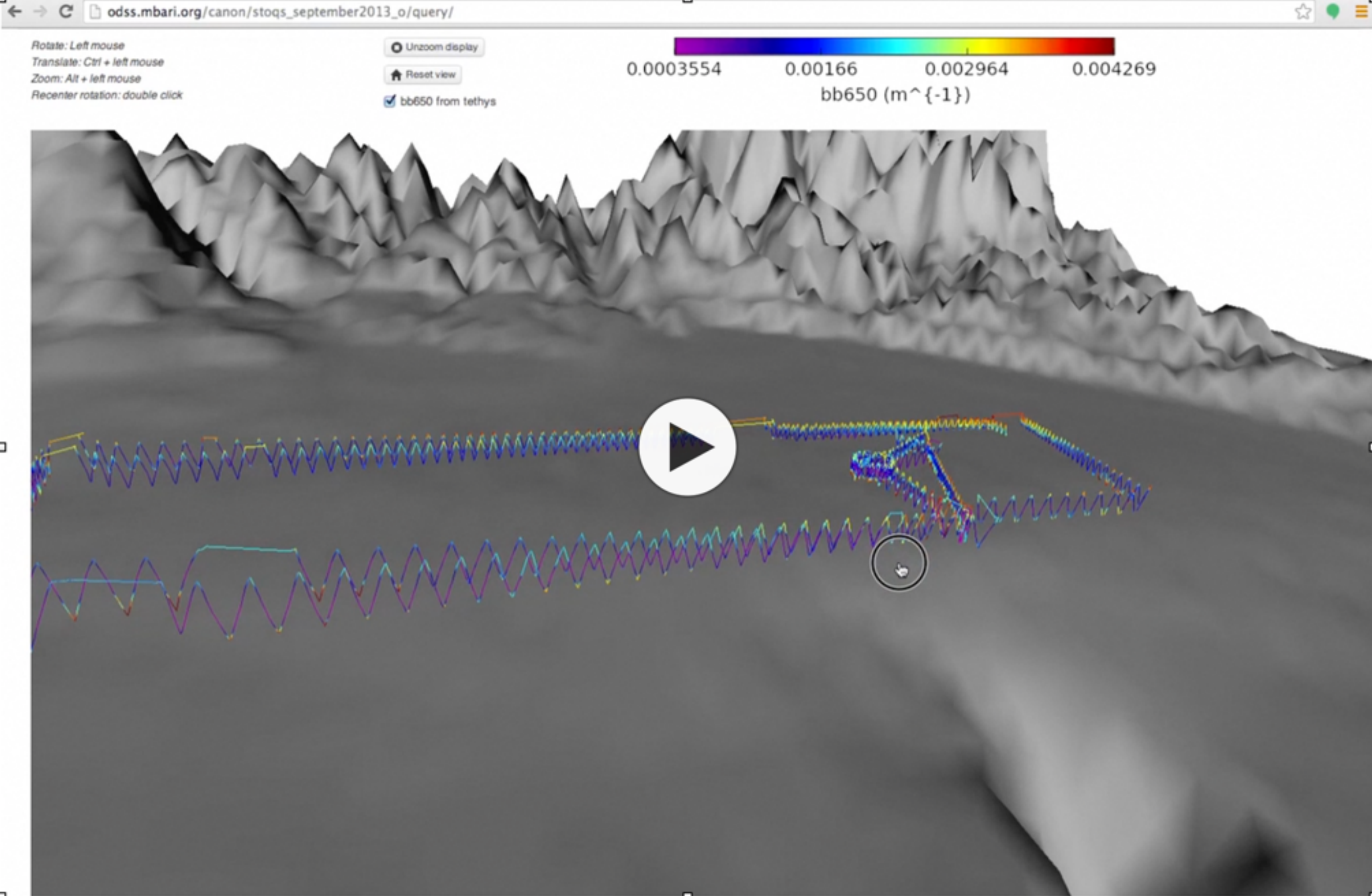6. Explore, visualize, and understand data

STOQS Architecture

All free and open source components

HTML5	jQuery & AJAX	Flot	OpenLayers	Twitter Bootstrap

X3DOM

Client
Server

Python with pydap, numpy, …	Minnesota Mapserver	GeoDjango ORM & web framework

PostgreSQL + PostGIS

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Relational Database
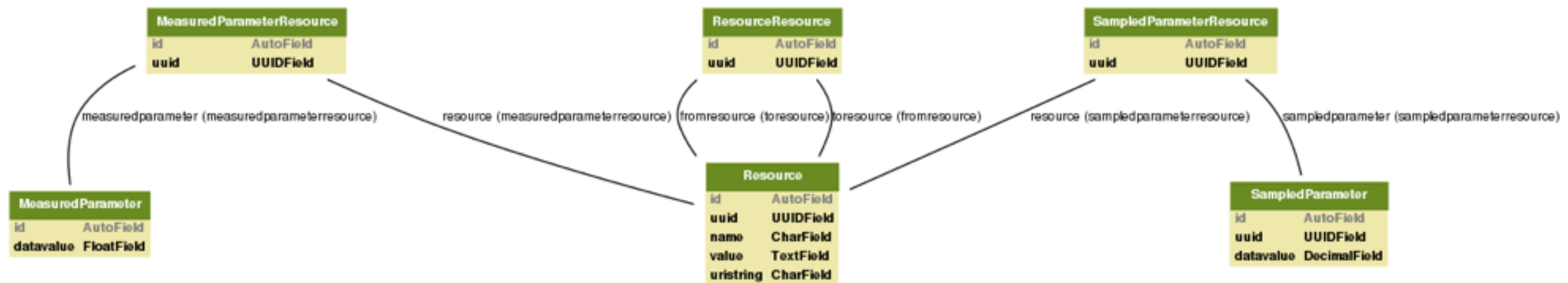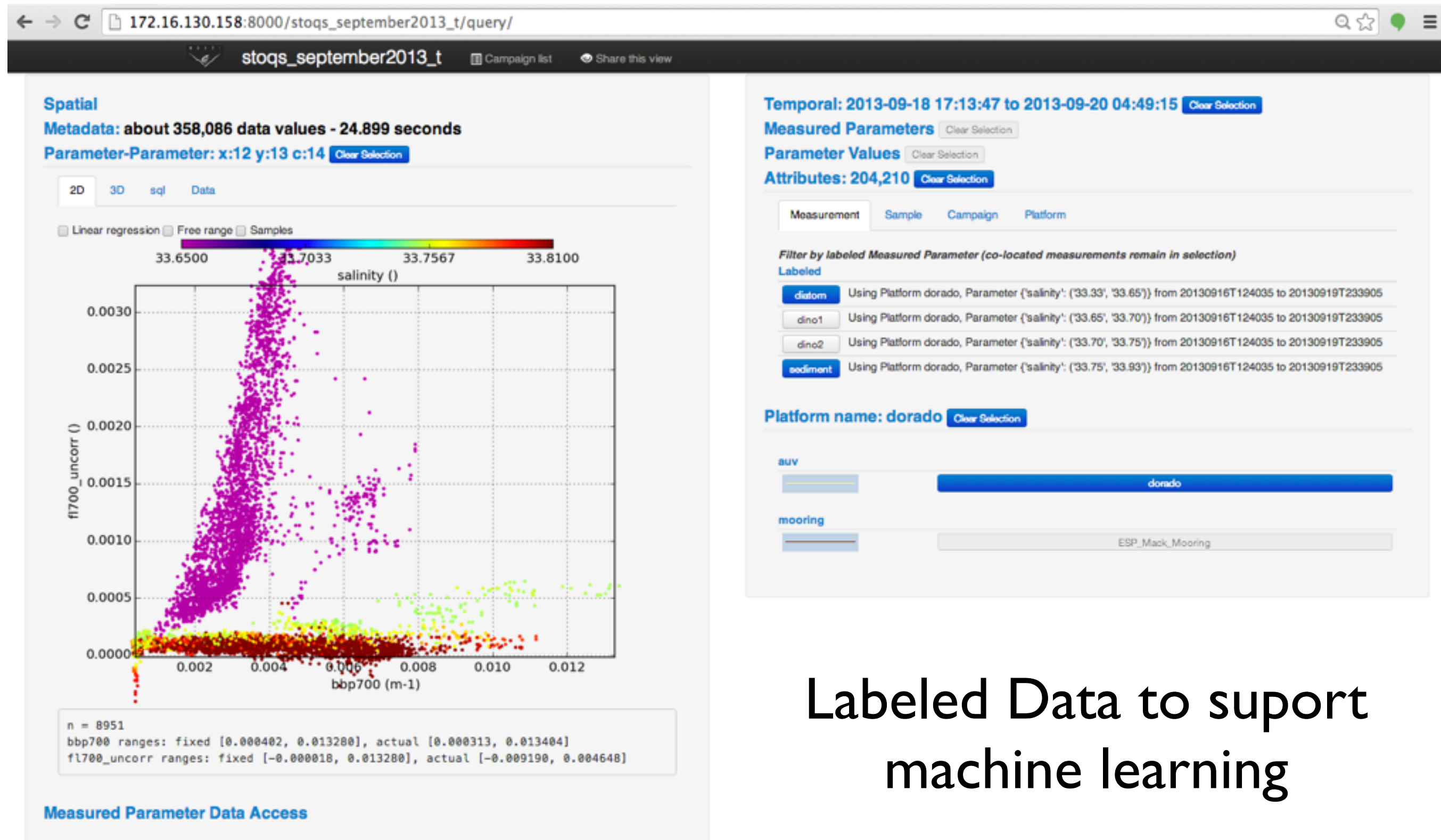
See video at stoqs.googlecode.com

Live Demo

Extra Slides

Tables to support machine learning

Labeled Data to suport
machine learning