

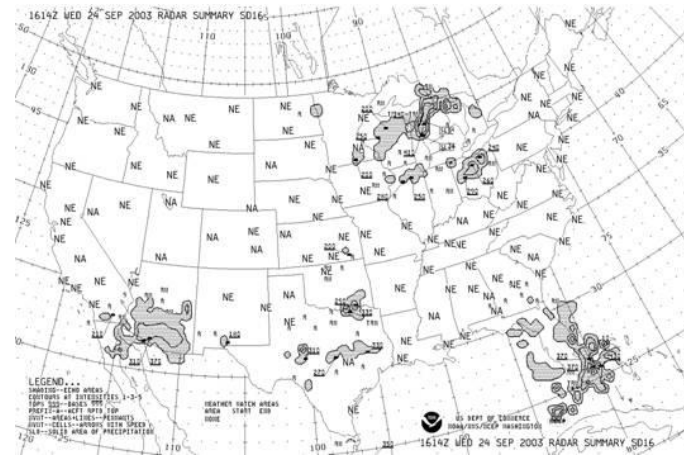
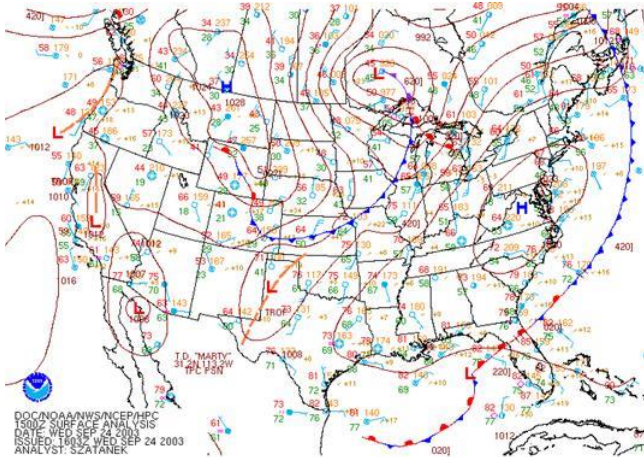
Unidata TDS Workshop

THREDDS Data Server Overview

25-26 October 2018

Unidata: Core Activities

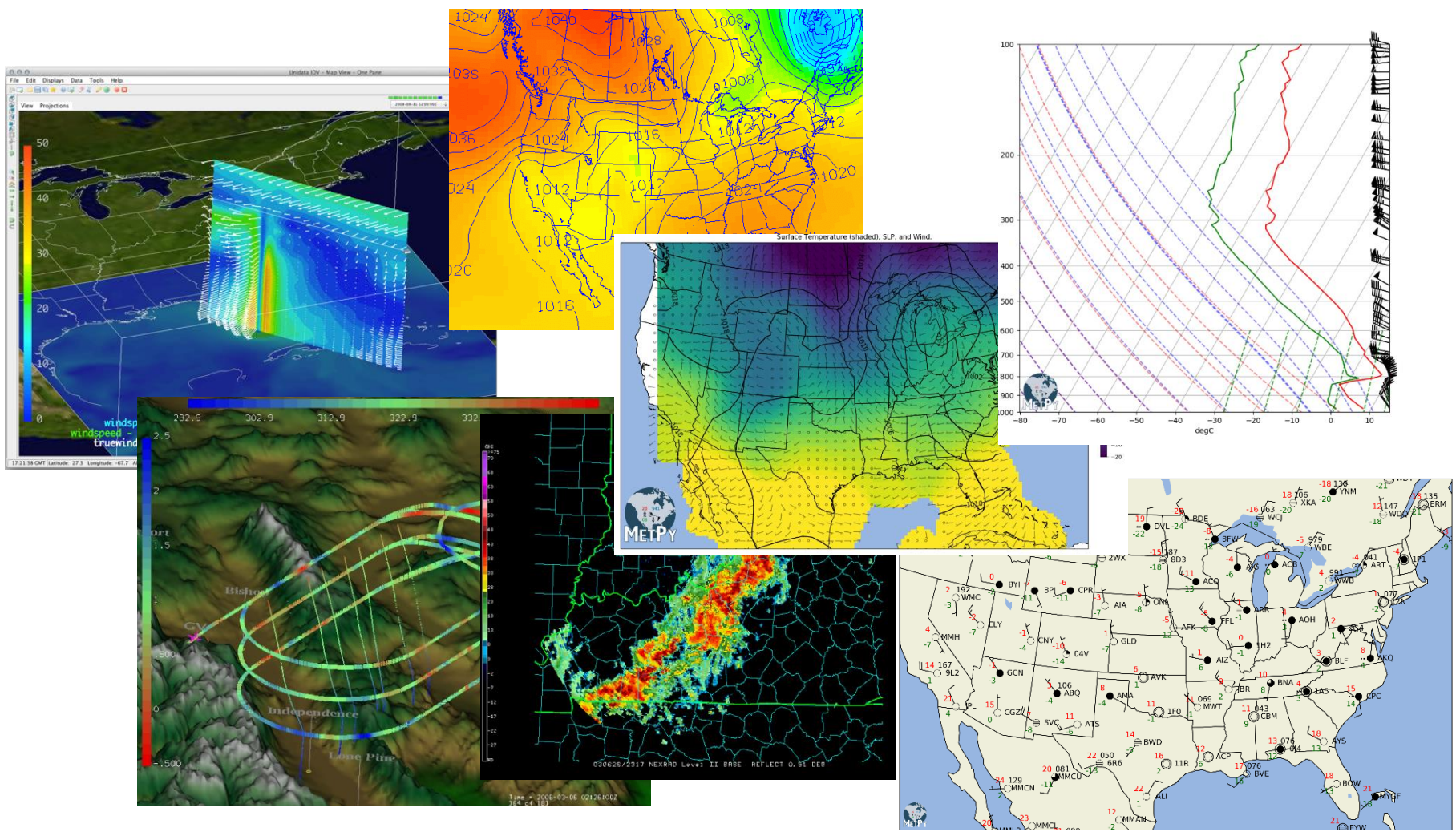
- Facilitate access to (real-time) data by the University research and education community
- Support the community in their use of the data
- Help build, represent, and advocate on behalf of the community





unidata

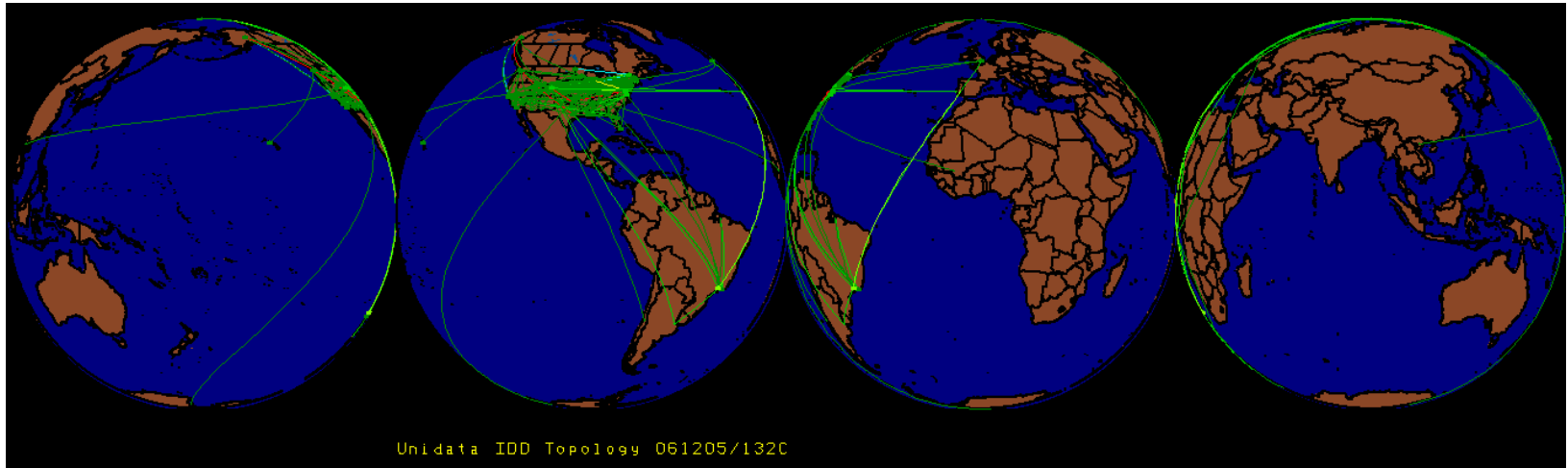
Unidata: Facilitate access to real-time data





Unidata: Facilitate access to real-time data Push

IDD: Real-Time Data Distribution



Over 200 sites. Approx 15 GB/hour

Unidata's LDM

- Protocol and client/server software
- Event-driven data distribution
- Supports subscription to subsets of data feeds

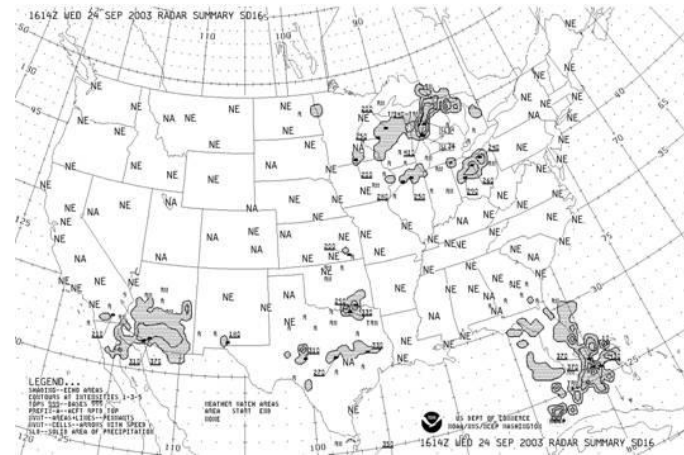
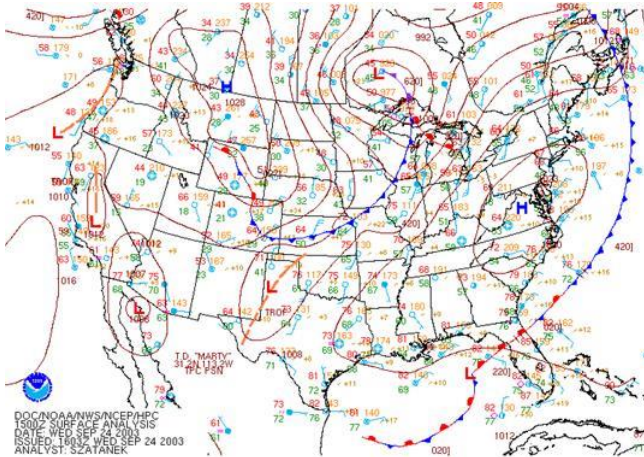


Unidata: Facilitate access to real-time data Pull

- IDD data from Unidata available via
 - Servers:
 - McIDAS ADDE
 - TDS
 - RAMADDA
 - Protocols:
 - HTTP, FTP
 - ADDE, OPeNDAP
 - OGC WCS and WMS
- The Unidata TDS server thredds.ucar.edu
“archives” latest 30 days or so of IDD data

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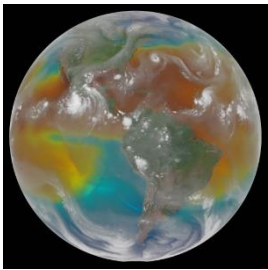


Unidata: Core Activities

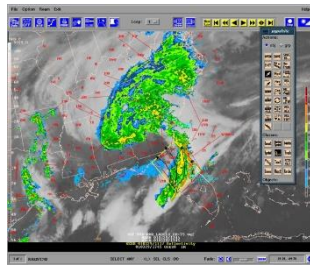
- Facilitate access to (real-time) data by the University research and education community
- Support the community in their use of the data
- Help build, represent, and advocate on behalf of the community
- Develop open source tools and infrastructure for data access, analysis, visualization, and data management
- Advance metadata standards for the earth science community
- Support users of our technologies

Visualizing and Analyzing Data

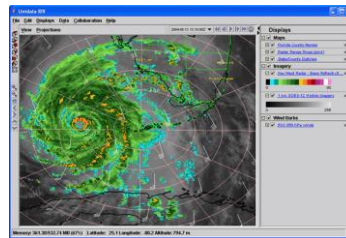
McIDAS-X



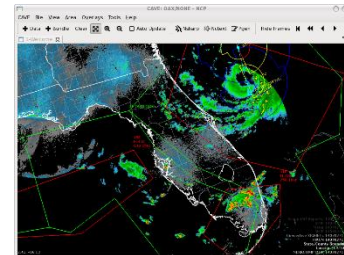
GEMPAK



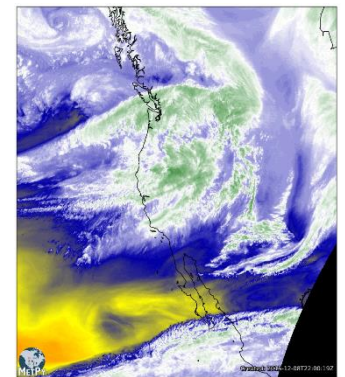
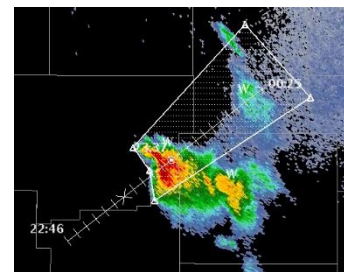
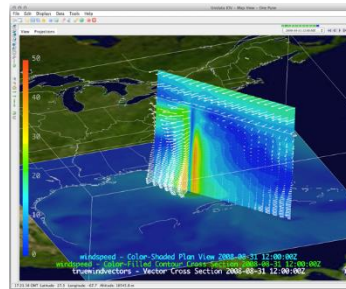
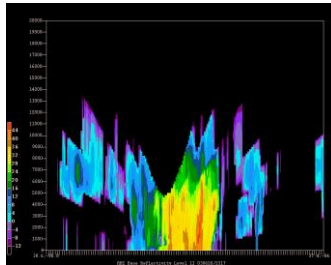
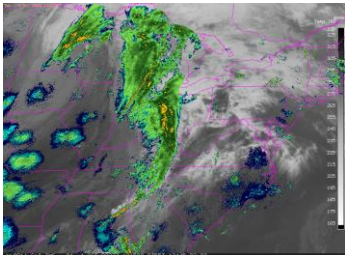
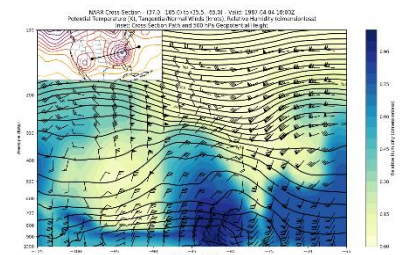
IDV



AWIPS



MetPy



Unidata User Community

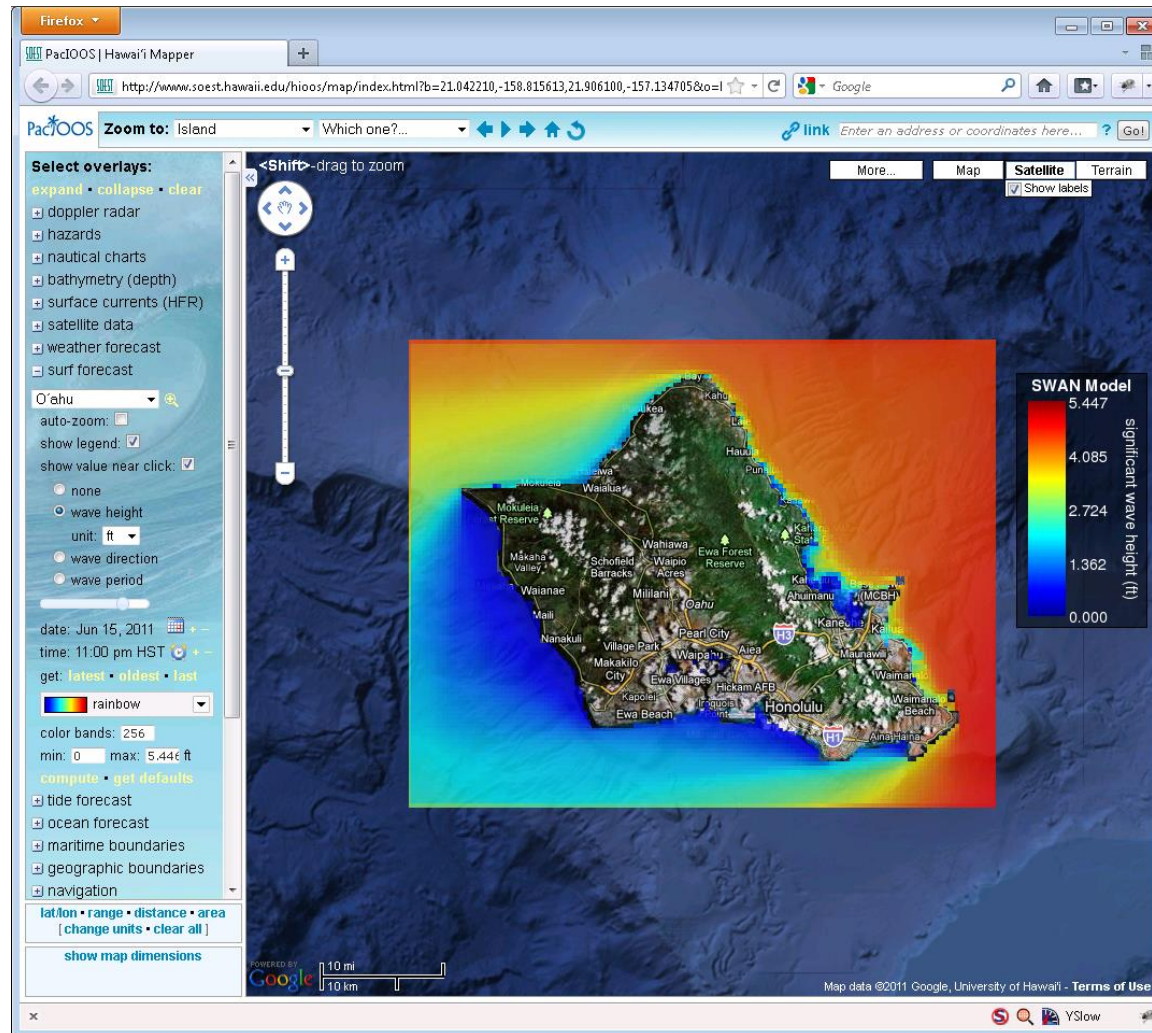
- Support the community
 - User Workshops
 - Training Workshops
 - Mailing lists
 - For specific software packages
 - “community” email list – for Unidata community announcements
- Represent and advocate for the community
- More: <http://www.unidata.ucar.edu/>

Why TDS?

Users

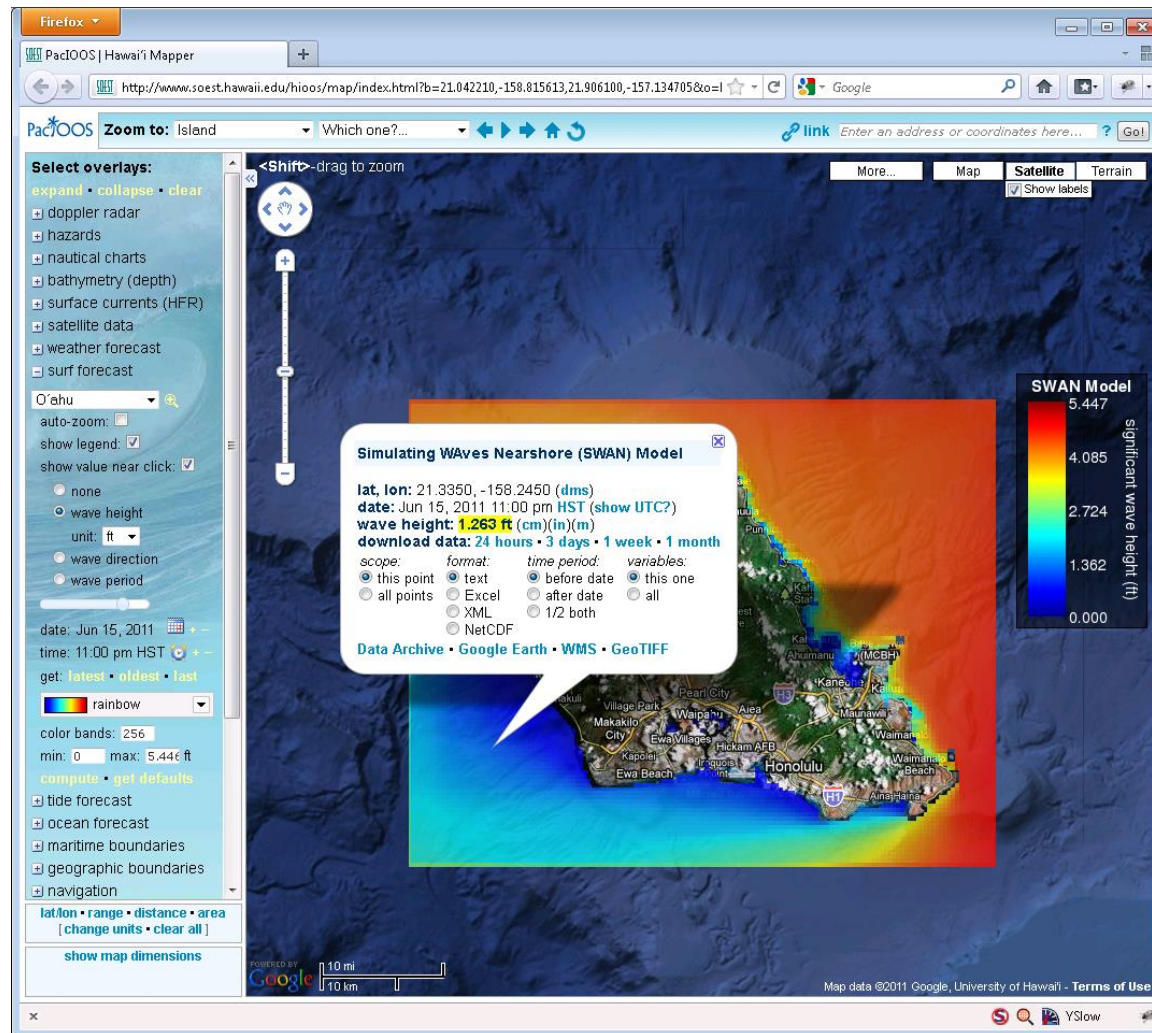
- As a user, some things I want to be able to do:
 - Easily ‘see’ information regarding the dataset, without the need to download any files
 - Temporal / spatial ranges, available variables, contact info, dataset details
 - Get only the data I need/want
 - Temporal, spatial, and variable subsetting
 - Get data remotely in a variety of ways
 - Download one file, even if data span multiple files

Why TDS? Users



* From PacIOOS site, developed by John Maurer, U of HI

Why TDS? Users



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Why TDS?

Data Providers

- As a data provider, I want to be able to:
 - Catalog my data holdings
 - Aggregate data files
 - Provide a 'quick view' of my data
 - Easily add information (metadata) to my datasets
 - Fix 'incorrect' datasets*
 - Allow flexibility in the way users access my data

Give users what they need to do science!

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Why TDS?

Data Providers

• As a

• Ca

• Ag

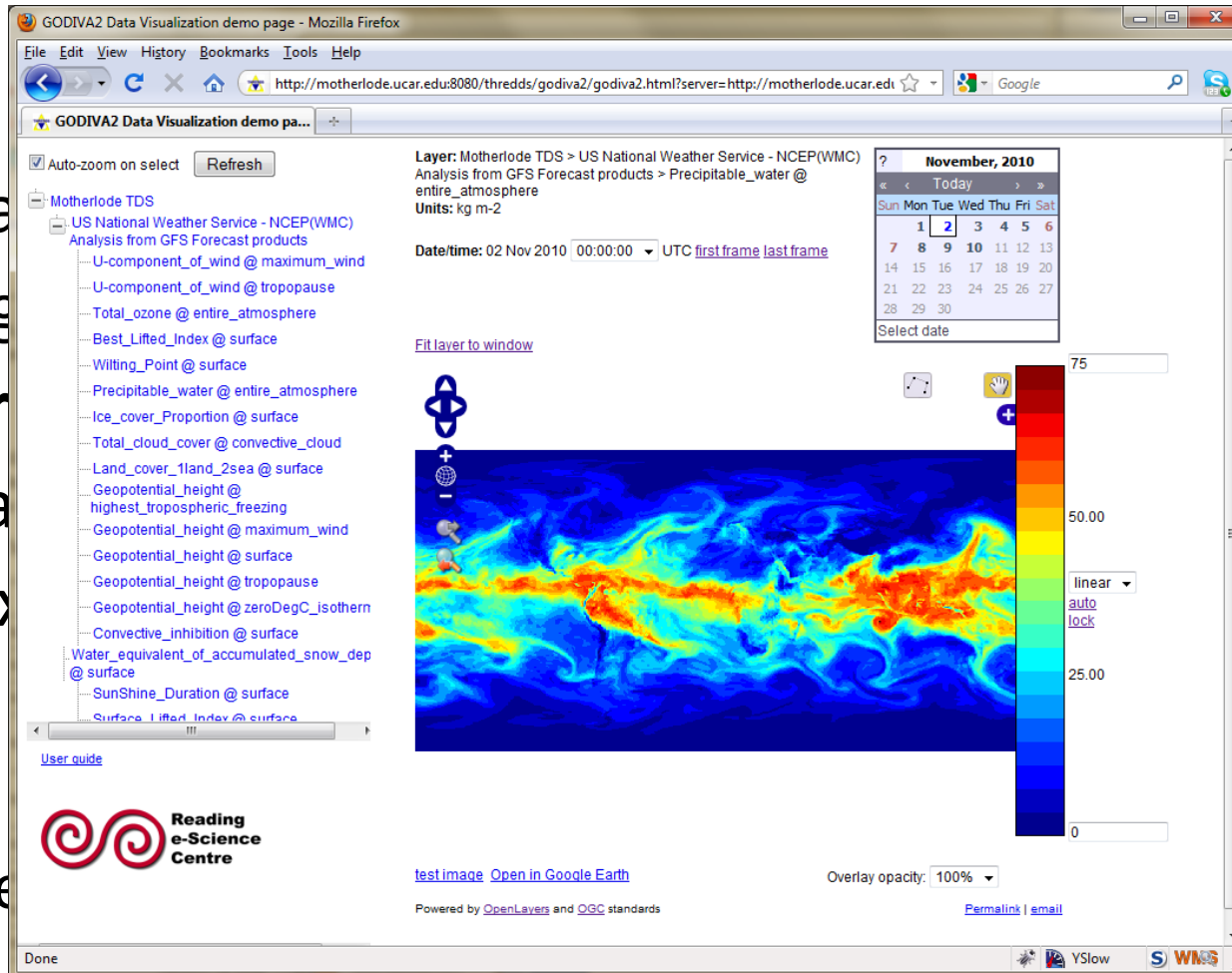
• Pr

• Ea

• Fix

• Al

Give use



tassets

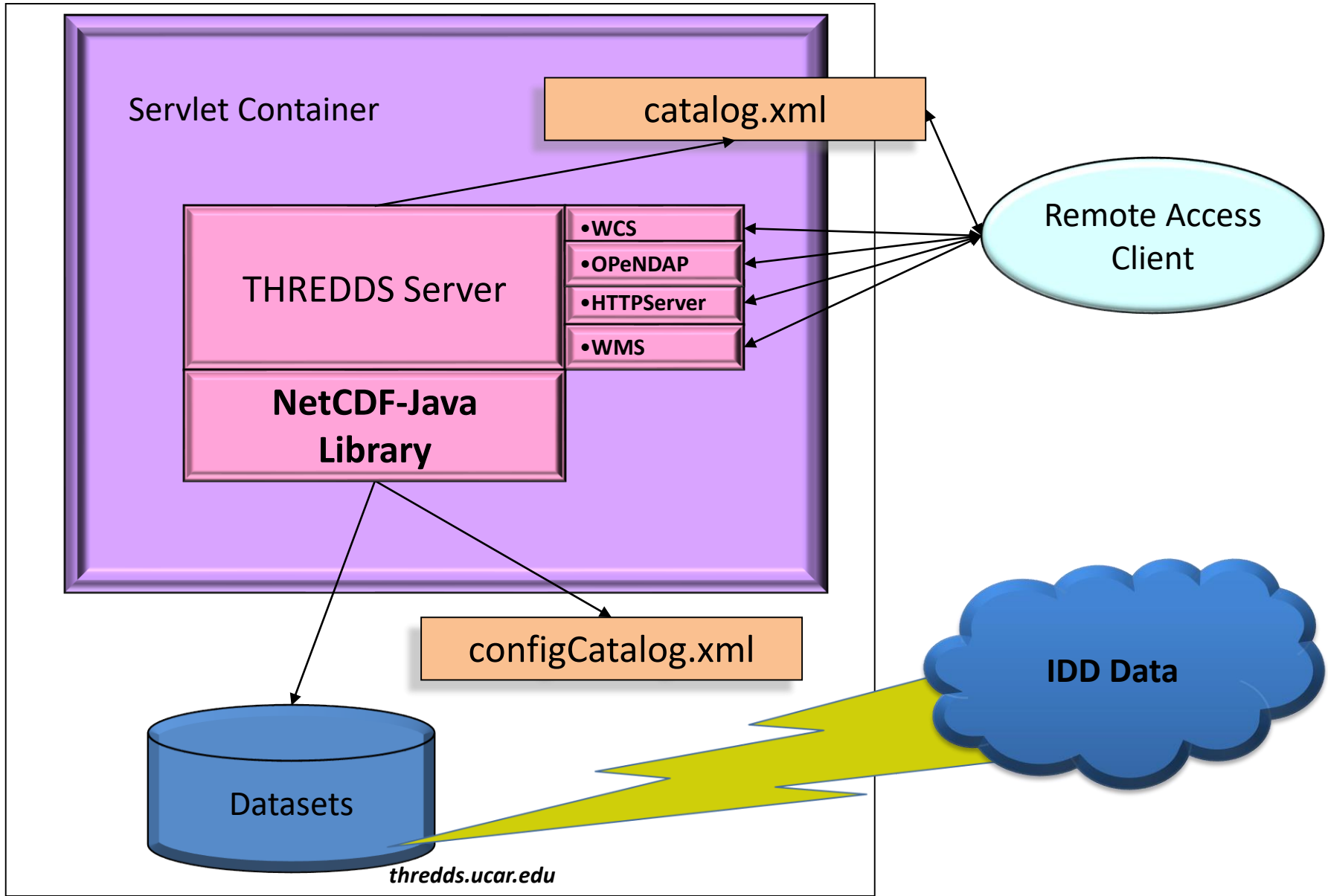
data

THREDDS Data Server (TDS)

- Web server for scientific data (written in 100% Java*)
- Can serve any dataset the netCDF-Java library can read
 - E.g., netCDF-3, netCDF-4, HDF-4, HDF-5, HDF-EOS, GRIB-1, GRIB-2
- Advertise available datasets and services via catalogs
- Data access (subset) services:
 - OPeNDAP
 - OGC WMS and WCS
 - NCSS
- Data collection services
 - Aggregation
 - Point/station collection
- Metadata services
 - THREDDS Catalog XML
 - ncISO: ISO, UDDC, NcML

* Writing netCDF-4 requires the netCDF-C library

THREDDS Data Server



THREDDS Data Server

Getting Started

- TDS is written in 100% Java
- TDS uses the Java Servlet framework
 - Need to Install Tomcat or other servlet container
 - Tomcat used in many places (The Weather Channel, Netflix, LinkedIn, to name a few)
 - Note: many cloud services / technologies can use servlets (e.g. Amazon Web Services, OpenStack, Google App Engine, Windows Azure Compute, etc.)