

Philip S. Callahan, Brian D. Wilson, Zhangfan Xing, Rob Raskin & Kenneth Oslund

Jet Propulsion Laboratory, California Institute of Technology

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Abstract

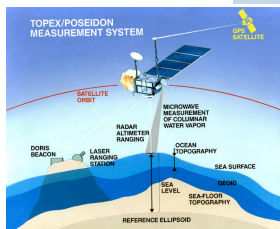
We are developing a web-based system to allow updating and subsetting of TOPEX data in netCDF. The Altimeter Service will be operated by PODAAC along with their provision of oceanographic data. The Service can be easily expanded to other altimeter data in netCDF. An Altimeter Service is crucial to the improvement and expanded use of altimeter data. A service is necessary for altimetry because the result of most interest (sea surface height anomaly, SSHA) is composed of several components which are updated individually and irregularly by specialized experts. This makes it difficult for projects to provide the most up-to-date products. Some components are the subject of ongoing research, so the ability for investigators to make products for comparison or sharing is important. The service will allow investigators/producers to get their component models or processing into widespread use much more quickly. For coastal altimetry, the ability to subset the data to the area of interest and insert specialized models or data processing results is crucial.

A key part of the Altimeter Service is having data producers provide updated or local models and data. In order for this to succeed, producers need to register their products with the Altimeter Service and to provide the product in a form consistent with the service update methods.

We will describe the capabilities of the web service and the methods for providing new components. A key feature of the Service is providing TOPEX GDRs with Retracking (RGDRs) in netCDF format that has been coordinated with Jason data. Users can add new orbits, tide models, geophysical fields such as mean sea surface, and along-track corrections as they become available and are installed by PODAAC. The updated fields are inserted into the netCDF files while the previous values are retained for comparison. The Service will also generate SSH and SSHA.

The research described here was carried out at the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Background



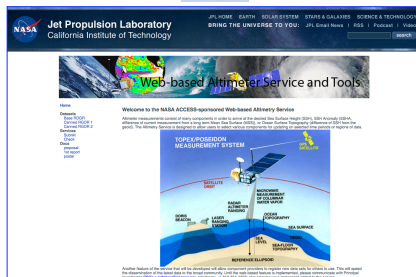
- An Altimeter Service is needed because:
 - Altimeter data consist of several specialized "components" that are updated by different groups at irregular intervals
 - Specialized data exist for localized areas
- Altimeter Sea Surface Height Measurement Components for Updating:
 - Orbit
 - Tides
 - Radiometer (point-by-point, reprocessed)
 - Atmospheric – range, inverse barometer
 - Mean Sea Surface, Geoid (gridded field)
 - Range processing, corrections

Capabilities

- Base data set produced from RGDRs in netCDF as similar as possible to Jason. CF-compliant attributes
- Data Selection by
 - Cycle/pass range/list
 - Lat, Lon Region
- Select version of components for updating
- Select output file variables (planned. Current appends new field to field, retains original field)
- Generates separate file of old (GDR) and new (Retrack plus updates) Sea Surface Height (SSH) and SSH Anomaly (SSHA) with the key variables used to make them

Sample Screens

Home



Submit



User enters email to send link to results, selects updates to do.

Click on links for data subsetting: Cycle/Pass or Space/Time.

When all selections are made a job is submitted on the server. When the job is completed an email is sent to the user with a link to retrieve the data.

Datasets

Index of /aws/dataset/

Name	Last modified	Size	Description	Writable
Parent Directory				
aws_001	2010-08-27 16:30:40			
aws_001_01	2009-08-08 09:42:17			

Index of /aws/dataset/base_rgdr/cyc362/

Name	Last modified	Size	Description	Writable
Parent Directory				
base_rgdr_001_01	2010-08-27 16:54:09	1203324		
base_rgdr_001_02	2010-09-01 12:09:36	326128		
base_rgdr_001_03	2010-08-27 16:54:10	1205856		
base_rgdr_001_04	2010-09-01 12:09:37	326796		
base_rgdr_001_05	2010-08-27 16:54:12	1206864		
base_rgdr_001_06	2010-09-01 12:09:38	329124		
base_rgdr_001_07	2010-08-27 16:54:13	1377272		
base_rgdr_001_08	2010-09-01 12:09:38	347940		
base_rgdr_001_09	2010-08-27 16:54:14	1313136		
base_rgdr_001_10	2010-09-01 12:09:39	331276		

Data can be viewed through a browser as shown below.

Both RGDRs and SSHA files available in netCDF

Variables

User can see any variable in netCDF file. Attributes can be opened. Various views of the data are available. Download options (endian, netcdf) can be chosen.

"webification" (work of Zhangfan Xing) provides a plugin to plot any netcdf variable. →

