

# Space geodesy related web services

What is delivered:

- Time series of crustal deformation caused by atmosphere and hydrosphere mass redistribution
- Time series of time variable gravity field
- Time series of slant path delay in the atmosphere
- Time series of the atmospheric angular momentum
- Time series of the Earth rotation parameters

User communities: geodesy, geophysics, astronomy

The number of active users: 100–300

# Backend

Ingests publicly available data from GMAO, GFZ, CDDIS and other on hourly basis

1. Input data,  $\sim 70\text{GB/day}$ . Preprocessed and discarded
2. Preprocessed input data:  $\sim 15\text{TB}$  and growing
3. User accessible intermediate data products
4. User accessible final data products

Items 3 and 4 take 11.5TB, 3.9 million files, and growing.

Re-computation of items 3–4 runs every 1 to 2 years and requires 5–50 days on a 32-core host.

Backend is open source itself and has only open source dependencies.

# Front-end

Uses apache http server

Three levels:

1. a user browses the data collection and generates the list of URLs to download
2. a user provides a list of stations and initiates analysis in place
3. a client library is provided that communicates with the HTTP server using wget. User incorporates it in his/her code. Demo executables are provided.