Studies have indicated that land cover and use changes in Northern Eurasia influence global climate system. However, the procedures are not fully understood and it is challenging to understand the interactions between the land changes in this region and the global climate. Having integrated data collections from multiple disciplines are important for studies of climate and environmental changes. Remote sensed and model data are particularly important due to sparse in situ measurements in many Eurasia regions especially in Siberia. The NASA GES DISC (Goddard Earth Sciences Data and Information Services Center) NEESPI data portal has generated infrastructure to provide satellite remote sensing and numerical model data for atmospheric, land surface, and cryosphere. Data searching, subsetting, and downloading functions are available. One useful tool is the Web-based online data analysis and visualization system, Giovanni (Goddard Interactive Online Visualization And Analysis Infrastructure), which allows scientists to assess easily the state and dynamics of terrestrial ecosystems in Northern Eurasia and their interactions with global climate system. Recently, we have created a metadata database prototype to expand the NASA NEESPI data portal for providing a venue for NEESPI scientists to find the desired data easily and leveraging data sharing within NEESPI projects. The database provides product level information. The desired data can be found through navigation and free text search and narrowed down by filtering with a number of constraints. In addition, we have developed a Web Map Service (WMS) prototype to allow access data and images from different data resources.

**Overview**

**Data Access Tools and Services**

**NEESPI Data Searching Portal**

This portal intends to help people find data related to NEESPI project. The portal allows searching for data by project, location, investigator, science keywords, etc. and refined searching results by specify category or text.

**Other data download services**

- Direct FTP: Direct FTP download from the Simple, Scalable, Script-Based, Science Processing Archive (SAPa) system
- OPeNDAP: Open-source Project for a Network Data Access Protocol
- GIS: OGC-compliant GIS map and coverage servers to provide image and data to remote system

**NEESPI WMS Service Prototype**

This service allows a user to access data and images from other data service center through the Web Map Service (WMS). Through current prototype, a user can access the fires within 24 hours from Web Fire Mapper, Univ. of Maryland; high resolution land cover map from JPL (Landsat7, highest 15m) and POSTEL (MERIS/ENVISAT,300m); and daily UV aerosol index from GES DISC (OMI, 1x1 deg).

**Giovanni NEESPI, An Online Visualization and Data Analysis System:**

http://giovanni.gsfc.nasa.gov

- **Single Parameter Exploration:**
  - Line-Lon area plots of time-averaged parameters
  - Time-series plots of area-averaged parameters
  - Latitude, longitude-Time Hovmoller diagram
  - Animators of consecutive Line-Lon area plots
- **Multi-parameter Intercomparison:**
  - Line-Lon area plots of two parameters
  - Time-series of two parameter differences
  - Scatter plots with regression statistics
  - Temporal correlation maps
- **Download:**
  - Data in format: ASCII, Text, netCDF
  - Image: PGM, IMAG for Google Earth

**Dust Storm over East China**

Sample Images of Giovanni

**Future High Resolution Products**

- Mosaic & Re-Projection
- Integrate into Giovanni

**Parameters in Giovanni NEESPI**

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