Editor’s Note

Greetings! It is nearly December 2016, and as many scientists are aware, before it’s time to gather for the holidays, it’s time to gather for the presentations and posters in San Francisco*. That’s right, it’s the most wonderful time of the year, the American Geophysical Union Fall Meeting. The meeting is one of the largest (possibly the largest) scientific meeting held annually in the world.

It is traditional at this time of the year that many staff members of the NASA Goddard Earth Sciences Data and Information Services Center (GES DISC) travel to the city by the bay for the AGU Fall Meeting, and this year is no exception. In this special issue, each of the GES DISC presentations that have a connection to Giovanni are summarized. Times, titles, and authors for other presentations given by GES DISC staff are also provided, in chronological order.

So, mull some cider and mull over the schedule for the GES DISC at the AGU! (There are a few other interesting things in this issue, as well.)

Jim Acker
Editor, The Giovanni News

*The meeting moves from SF to New Orleans in 2017 and Washington D.C. in 2018 while the Moscone Convention Center in SF is renovated.

Paper of interest, October 2016:


In the oceans, the metabolic state of a particular region refers to whether the region is heterotrophic (relying on inputs of carbon from external sources) or autotrophic (relying on input of carbon produced internally by photosynthesis). In the Mediterranean Sea, heterotrophic regions are found nearer the coast (with carbon inputs from rivers) and autotrophic regions further from the coast. In this study, the researchers examine the question of how this situation might change, due to increasing amounts of atmospheric dust deposition derived from desert areas. Dust influences both nutrient input and the incidence of ultraviolet radiation (UVR), which can suppress phytoplankton productivity at high levels. The researchers conclude that increasing dust in the atmosphere and deposited on the ocean surface shifts the open ocean toward an autotrophic state, which would cause increased uptake of carbon dioxide (CO₂) from the atmosphere.

This paper used aerosol index (AI) and surface shortwave fluxes (i.e. UVR) downloaded with Giovanni. AI data was from TOMS, TOMS-EP, and OMI, and UVR from the MERRA-2 model.

A13D-0296: Constructing an AIRS Climatology for Data Visualization and Analysis to Serve the Climate Science and Application Communities (POSTER)

Monday, 12 December 2016, 13:40 - 18:00, Moscone South - Poster Hall


In this paper, Feng Ding and his co-authors discuss the construction of a climatological data set for data from the Advanced Infrared Sounder (AIRS). The GES DISC is responsible for archiving and distributing data from AIRS and will also feature these services for the Cross-track Infrared Sounder (CrIS) on the Suomi National Polar-orbiting Partnership (SNPP) satellite. The GES DISC currently has Version 6 of AIRS data; many AIRS data products are available in the Giovanni system. This presentation will discuss the development of a climatology from 14 years of AIRS data retrievals, and will investigate the impact of different aggregation methods. Several data analysis capabilities in Giovanni will be used to demonstrate various aspects of this AIRS climatology.
AGU 2016 Fall Meeting
December 13, 2016 (Tuesday)

ED21B-0782: Explore Earth Science Datasets for STEM with the NASA GES DISC Online Visualization and Analysis Tool, GIOVANNI (POSTER)

Tuesday, 13 December 2016 08:00 - 12:20 Moscone South - Poster Hall

Zhong Liu, NASA GES DISC/George Mason University; James G. Acker, NASA Goddard Space Flight Center/Adnet Systems, Inc.

The NASA Goddard Earth Sciences (GES) Data and Information Services Center (DISC) is one of twelve NASA Science Mission Directorate (SMD) Data Centers. The GES DISC is archives and distributes NASA Precipitation and Hydrology data, as well as Atmospheric Composition and Dynamics remote sensing data and information.

To facilitate Earth science data access, the GES DISC has been developing user-friendly data services for users at different levels. The Geospatial Interactive Online Visualization ANd aNalysis Infrastructure (Giovanni, http://giovanni.gsfc.nasa.gov/) is notable in allowing users to easily explore satellite-based data using sophisticated analyses and visualizations directly with just a Web browser. This feature makes Giovanni particularly suitable for Earth science novices, particularly students, to use NASA datasets in Science, Technology, Engineering, and Math (STEM) activities. In this presentation, we will briefly introduce Giovanni and recommend datasets suitable for STEM. Examples of the use of these datasets in STEM activities will be presented as well.

H23F-1622: New global precipitation products and data service updates at the NASA GES DISC (POSTER)

Tuesday, 13 December 2016, 13:40 - 18:00, Moscone South - Poster Hall

Zhong Liu, NASA GES DISC/George Mason University; Dana Ostrenga, NASA GES DISC/Adnet Systems, Inc.; Andrey Savtchenko, NASA GES DISC/ADNET Systems Inc.; Barbara Deshong, NASA GES DISC/ADNET Systems Inc.; Bruce Vollmer, NASA Goddard Space Flight Center; Mary Greene, Wyle Information Systems; Steven J. Kempler, NASA Goddard Space Flight Center

This presentation highlights the GES DISC archive for precipitation data products from the Tropical Rainfall Measuring Mission (TRMM) and the Global Precipitation Measurement (GPM) project. The current Version 4 of GPM data will be introduced, with comparisons to the Version 3 counterparts. In addition, Version 3 of the Global Precipitation Climatology Project (GPCP), providing data from 1979-present, will also be presented. The authors demonstrate use of the data with new features of the Giovanni data analysis system.
The National Climate Assessment-Land Data Assimilation System (NCA-LDAS) is an Integrated Terrestrial Water Analysis, and is one of NASA’s contributions to the NCA of the United States. The development of the NCA-LDAS has been led by the Goddard Hydrological Sciences Laboratory (HSL). Released data from a pair of Land Surface Models (LSM) include including soil moistures/temperatures, surface fluxes, snow cover/depth, groundwater, runoff, and streamflow. The NCA-LDAS data are archived at and distributed by the NASA Goddard Earth Sciences Data and Information Services Center (GES DISC). The data can be accessed via HTTP, OPeNDAP, Mirador search and download, and NASA Earthdata Search. These data are also integrated into Giovanni and the DataRods system. This presentation summarizes the major characteristics of the NCA-LDAS data and describes the data services and access methods.
ED43A-0849: Exploring and Analyzing Climate Variations Online by Using MERRA-2 data at GES DISC (POSTER)

Thursday, 15 December 2016 13:40 - 18:00 Moscone South - Poster Hall

Suhung Shen, NASA GES DISC/George Mason University; Dana Ostrenga, NASA GES DISC/Adnet Systems, Inc.; Bruce Vollmer, NASA Goddard Space Flight Center; Steve Kempler, NASA Goddard Space Flight Center

NASA Giovanni (Geospatial Interactive Online Visualization ANd aNalysis Infrastructure) (http://giovanni.sci.gsfc.nasa.gov/giovanni/) is a Web-based data visualization and analysis system developed by the Goddard Earth Sciences Data and Information Services Center (GES DISC). Recently, long term global assimilated atmospheric, land, and ocean data have been integrated into the system, enabling quick exploration and analysis of climate-relevant data. Examples include: climate reanalysis from NASA Modern-Era Retrospective analysis for Research and Applications, Version 2 (MERRA-2) which provides data beginning in 1980 to present; land data from NASA Global Land Data Assimilation System (GLDAS) which assimilates data from 1948 to 2012; as well as ocean biological data from the NASA Ocean Biogeochemical Model (NOBM) which assimilates data from 1998 to 2012. This presentation, using surface air temperature, precipitation, ozone, and aerosol, etc. from MERRA-2, demonstrates climate variation analysis with Giovanni at selected regions.

NO₂ Tropospheric Column data over Europe and western Asia averaged over the period November 23-30, 2015.
Among the known atmospheric constituents, aerosols still represent one of the greatest uncertainties in climate research. Characterizing this uncertainty requires bringing together observational (in-situ and remote sensing) and modeling datasets and inter-compare them synergistically for a wide variety of applications. The NASA Goddard Earth Sciences Data and Information Services Center (GES DISC) has developed multiple MAPSS (Multi-sensor Aerosol Products Sampling System) applications as a part of the Giovanni (Geospatial Interactive Online Visualization and Analysis Interface) data visualization and analysis tool since 2007. The MAPSS database provides spatio-temporal statistics for multiple spatial spaceborne Level 2 aerosol products sampled over AERONET ground stations. This presentation demonstrates a new visualization service (NASA Level 2 Data Quality Visualization, DQViz) supporting various visualization and data accessing capabilities from satellite Level 2 (MODIS/MISR/OMI) and long term assimilated aerosols from NASA Modern-Era Retrospective analysis for Research and Applications, Version 2 (MERRA-2).

Friday, 16 December 2016 08:00 - 12:20  Moscone South - Poster Hall


PA53A-2276: Data Mining Twitter for Science Applications (POSTER)

Friday, 16 December 2016 13:40 - 18:00  Moscone South - Poster Hall


IN53C-1889: Data List: A Value-Added Service to Enable Easy Data Selection (POSTER)

Friday, 16 December 2016 13:40 - 18:00  Moscone South - Poster Hall


NH53A-1985: Data List - Specifying and Acquiring Earth Science Data Measurements All at Once (POSTER)

Friday, 16 December 2016 13:40 - 18:00  Moscone South - Poster Hall


IN53C-1915: Advancing User Supports with Structured How-To Knowledge Base for Earth Science Data

Friday, 16 December 2016 13:40 - 18:00  Moscone South - Poster Hall

Suhung Shen, NASA GES DISC/George Mason University; James G. Acker, NASA GES DISC/Adnet Systems, Inc.; Chris Lynnes, NASA Goddard Space Flight Center; Luther Lighty, NASA Goddard Space Flight Center; Tammy Beaty, Oak Ridge National Laboratory Distributed Active Archive Center; Steve Kempler, NASA Goddard Space Flight Center
Also at the AGU 2016 Fall Meeting: Flash Talk at the NASA Booth

“The Eventful Earth – Seen Through NASA Data in Giovanni”
Dr. Jennifer Wei

Thursday, December 15
2:00 – 2:07

Eruption of Sarychev Peak, 2009