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NASA Satellite and Model Data and Services to Support NEESPI and MAIRS

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During the past two to three decades, the Northern Eurasia and Asian Monsoon regions have experienced significant changes in agriculture, industry and economics. Studies have indicated that land use and land cover changes due to climate change and human activities not only changes local climate but also influence global climate system. However, the interaction between human activity, land processes, and climate change are not fully understood. Having integrated interdisciplinary multi-sensor data are important for speeding up studies of climate and environmental changes. During the past three years, more than thirty monthly and daily global satellite datasets for atmospheric, land surface, and cryosphere were collected and an automated data processing, archive, and distribution system was established in supporting the Northern Eurasia Earth Science Partnership Initiative (NEESPI) project. Data tools and services, such as temporal and spatial search, parameter and spatial subsetting, advanced data downloading, are available. Most data have been integrated into the Web-based online data analyses and visualizations system, Giovanni (Goddard Interactive Online Visualization ANd aNalysis Infrastructure). The established data services infrastructure will be used and improved further for supporting Monsoon Asia Integrated Regional Study (MARIS) project. We plan to integrate higher resolution land process data into the Giovanni system, such as vegetation index, land surface temperature, and active fire at 5km and 1km from the standard MODIS products. About 30 years (since 1979) simulated land products from the NASA Global Land Data Assimilation System (GLDAS), and simulated atmospheric products from the NASA MERRA project will be available through the NASA MAIRS data portal. Due to large overlap of the geographic coverage and many similar interesting of NEESPI and MAIRS, collected data will serve for both projects. In this presentation, in addition to the introduction of data and tools, sample studies will demonstrate the great abilities of the Giovanni system in multi-sensor data exploration. Detailed information of the NASA data portal to support NEESPI and MAIRS projects can be found at: http://disc.gsfc.nasa.gov/neespi and http://disc.gsfc.nasa.gov/mairs.

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