

JAXA's Contribution to CEOP Satellite Data Archive

Naoto Matsuura
Japan Aerospace Exploration Agency
Earth Observation Research and Application Center

ABSTRACT

Japanese Aerospace Exploration Agency (JAXA) has been supporting CEOP activities producing CEOP satellite datasets. The satellite datasets consists of Level 1B (radiances), Level 2 (geophysical parameters) and Level 3 (girded/averaged) data in association with CEOP reference sites, continental scale experiments regions and global coverage during Enhanced Observing Periods (EOPs).

CEOP data collection is implemented in phase. The third phase (EOP-3) as annual observation period started from October 2002 to September 2003, and the fourth phase (EOP-4) extended from October 2003 to December 2004. JAXA produced the CEOP satellite datasets obtained from several satellites including other agencies ones during the EOP-3 and EOP-4.

The CEOP satellite datasets consist of geo-coded data which are re-sampled to regular latitude longitude grid at 3 type scales: 35 reference sites as small scale, 5 monsoon regions as large scale, and whole area of earth as global scale. The datasets include radiance data and geo-physical parameter such as soil moisture, vegetation index, water vapor, precipitation, sea surface temperature and so on. These are retrieved from not only JAXA's sensor data such as Advanced Microwave Scanning Radiometer (AMSR) and Global Imager (GLI) onboard Advanced Earth Observing Satellite-II (ADEOS-II), Precipitation Radar (PR) and TRMM Microwave Imager (TMI) onboard Tropical Rainfall Measuring Mission (TRMM) spacecraft, Advanced Microwave Radiometer for EOS (AMSR-E) onboard Aqua, but Special Sensor Microwave/Imager (SSM/I) onboard Defense Meteorological Satellite Program (DMSP) spacecraft. These datasets consist of raster image data and meta-data that describe observation conditions and processing condition basis on ISO, and make it easy to compare satellite data with in-situ measurement and model output.

JAXA launched ALOS (advanced land observing satellite), named Daichi, on January 24, 2006 successfully. JAXA will verify the functions of the satellite onboard equipment for about three months until April and start to provide ALOS data in this autumn. ALOS has L-band synthetic aperture radar, PALSAR, which is an active microwave sensor for cloud-free and day-and night land observation and may provide soil moisture distribution.

Corresponding to the 9 societal benefit areas of GEOSS in space applications, Japan emphasizes disaster monitoring, climate change including water cycle variation, and global warming due to carbon cycle change. JAXA continues to establish Earth observation programs that facilitate cutting-edge complementary systems contributing to GEOSS. JAXA will develop and operate satellites and sensors for GEOSS such as disaster monitoring satellites, Global Climate Observing Missions called GCOM-W and GCOM-C, a Cloud Profiling Radar (CPR) installed on the EarthCARE satellite, a Dual-frequency Precipitation Radar (DPR) to be installed in the Global Precipitation Measurement (GPM) satellite, and a Greenhouse Gases Observation Satellite (GOSAT).

JAXA will contribute future CEOP activities through the satellite programs, the provision of satellite datasets and further development of CEOP archive system.