

GCOM-W1/AMSR-2 Status and Utilization at NOAA

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Multi-channel passive microwave radiometry is a special application of microwave communications technology for the purpose of collecting Earth's electromagnetic radiation. With the use of radiometers onboard polar-orbiting satellites, scientists are able to monitor the Earth's environment on both short- and long-term temporal scales with near global coverage. The Global Change Observation Mission (GCOM) is part of the Japanese Aerospace Exploration Agency (JAXA) broader commitment toward a global and long-term observation of the Earth's environment. It consists of two polar-orbiting satellite series [GCOM-W (Water) and GCOM-C (Climate)] nominally with a 1-year overlap between each satellite in the series to allow for inter-calibration. As payloads for these missions, two instruments were selected to cover a wide range of geophysical parameters: the Advanced Microwave Scanning Radiometer -2 (AMSR-2) on GCOM-W, and the Second-Generation Global Imager (SGLI) on GCOM-C. The AMSR2 instrument, follow-on to the AMSR-E, will perform observations related to the global water and energy cycle, whereas the SGLI will conduct surface and atmospheric measurements related to the carbon cycle and radiation budget. The National Oceanic and Atmospheric Administration (NOAA) GCOM-W1/AMSR-2 product development and validation project is providing NOAA's users access to critical geophysical products derived from AMSR-2. These products, detailed in NOAA's Joint Polar Satellite System (JPSS) Level 1 Requirements Document Supplement [1], include: calibrated microwave brightness temperature (MBT), total precipitable water (TPW), cloud liquid water (CLW), precipitation type/rate (PT/R), sea surface temperature (SST), and Sea Surface Wind Speed (SSW). An overview of the status and achievements of GCOM-W1/AMSR-2 at NOAA will be presented.

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