



The Global Satellite Mapping of Precipitation (GSMaP) Project

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A new project on “The Global Satellite Mapping of Precipitation (GSMaP)” has started in 2002 under the sponsorship of Japan Science and Technology Agency to develop rainfall rate retrieval algorithms based on the reliable physical models of precipitations and to produce high-precision and high-resolution global precipitation maps from the satellite data in order to obtain the basic information for the research of global rainfall rate variation and for the long-term water resource management. This study focuses mainly on the improvement of rain retrieval algorithm for microwave radiometers such as TMI onboard TRMM satellite and AMSR-E onboard Aqua satellite. Our algorithm started with the algorithm proposed by Aonashi and Liu (2000). The latest version of GSMaP product contains several improvements: 1) “rain/no rain” classification algorithm which uses data base created from the TRMM/PR and TMI data, and 2) rain profile information for physical precipitation model which is based on the rain type classification by using TRMM/PR data. Several minor improvements in scattering algorithm are also added in this version. We have already processed seven-year data of TMI and one-year data of AMSR-E with this version. This product is compared with the latest version (version 6) of standard product of TRMM(PR and TMI). The result indicates that GSMaP product shows better agreement with PR than TMI standard product. The high-temporal resolution rain map is achieved with GEO/IR data: moving vector is calculated in each rain pixel of rain map based on GEO/IR data and the rain area moves according to the moving vector until it is updated by the next observation of microwave radiometer.