

TRMM Achievements and Expectation to GPM

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TRMM was launched in November 1997 and accumulated more than 10 year data on the precipitation, particularly over the tropical regions. The achievement of TRMM includes precise precipitation distribution, global characteristics of the precipitation systems lightning distribution, remarkable improvement of the rain rate retrieval from space, etc. The unique point of TRMM is the multi-sensors on the same platform. This enables nearly simultaneous precipitation system observations with several instruments. Through this capability, the improvement of the rain rate retrieval and the latent heating profiles have been attained. This also opened the door to the "precipitation system climatology" which includes the climatology of the three-dimensional precipitation system structure combined with diurnal variations. The life time of TRMM may extend over 2012, and more precise results can be expected.

The Global Precipitation Measurement (GPM) is a successor of TRMM, but the scope of GPM is much wider than that of TRMM. GPM will provide three hourly precipitation measurement over the globe, that is, much higher temporal resolution with wider coverage than TRMM. Current precipitation measurement is far from enough for the water resources management which requires very high spatial and temporal resolution. The three hourly global precipitation measurement with GPM will greatly contribute to real-world applications. The GPM core satellite will be equipped with a dual-wavelength radar a microwave radiometer and will work as a reference standard for the GPM constellation radiometers. The development of the space segment is going well, and the core satellite launch is scheduled in the middle of 2013.