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# Abstract Details



**Corresponding Author :** Dr. Shuji Shimizu (shimizu@eorc.jaxa.jp)
**Organization:** Japan Aerospace Exploration Agency
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**Title:** Six-year Rainfall Observation by TRMM PR and Development of DPR f

**Abstract:**

The Precipitation Radar (PR) has been flying aboard Tropical Rainfall Measuring Mission (TRMM) satellite that was launched in 1997. Since has been working very well without pauses. We have accumulated the data for more than six years. The primary data of PR is the monthly n the rainfall with a 0.5 degree surface resolution covering from 35 deg to 35 deg. south. We have summed up and been evaluating the mont of the rainfall in the tropics from 1998 to now. We obtained six-year a and global averaged rainfall data from the normal monthly rainfall. Th annual data tells us that there has not been any prominent change of rainfall in the tropics that might induce and/or be induced from the gl environment change. However the annual rainfall slightly decreased f 2002. We will evaluate whether the decrease was caused by the raisir of TRMM in 2001 or not. We notice the abnormal pattern of the rainfa year 1998 which relates the historically largest El-Nino event in 1997 1998 and the following La-Nina event. From the normal rainfall distrib data we can clearly identify the regional features of the rainfall such a intertropical convergence zone, the arid desert, the monsoon region, Global Precipitation Measurement (GPM) mission has been launched b the success of TRMM. The Dual-frequency Precipitation Radar (DPR) c GPM core satellite is being developed by Japan Aerospace Exploration (JAXA) and the National Institute of Information and Communications Technology (NICT). The objectives of the GPM program are to observe precipitation more frequently and more accurately than TRMM. DPR c of two radars, which are Ku-band (13.6GHz) precipitation radar (KuPR Ka-band (35.5GHz) radar (KaPR). The objectives of the DPR are (1) t provide three-dimensional precipitation structure including snowfall o ocean and land, (2) to improve the sensitivity and accuracy of precipi measurement, and (3) to calibrate the estimated precipitation amoun microwave radiometers (MWRs) on the GPM constellation satellites. K detect snow and light rain, and the KuPR will detect heavy rain. In an effective dynamic range in both KaPR and KuPR, drop size distributior information and more accurate rainfall estimates will be provided by a frequency algorithm. The algorithm must use the difference in rain attenuation from the matched beam data observed by KaPR and KuPR DPR will provide a global database of precipitation characteristics, suc storm heights, freezing levels, DSDs, the mean structure of precipitat profiles, and so on. This database must be useful in improving the MV