



The Orbital Checkout Status of the Dual-frequency Precipitation Radar (DPR) on the Global Precipitation Measurement (GPM) core observatory

Takeshi Miura (1), Masahiro Kojima (1), Kinji Furukawa (1), Yasutoshi Hyakusoku (1), Takayuki Ishikiri (1), Hiroki Kai (1), Toshio Iguchi (2), Hiroshi Hanado (2), and Katsuhiro Nakagawa (2)

(1) Japan Aerospace Exploration Agency, Tsukuba, Japan (miura.takeshi@jaxa.jp), (2) National Institute of Information and Communications Technology, Koganei-shi, Japan

The Dual-frequency Precipitation Radar (DPR) on the Global Precipitation Measurement (GPM) core observatory is developed by Japan Aerospace Exploration Agency (JAXA) with National Institute of Information and Communications Technology (NICT). GPM objective is to observe global precipitation more frequently and accurately. GPM contributes to climate and water cycle change studies, flood prediction and numerical weather forecast. GPM consists of the GPM core observatory and constellation satellites carrying microwave radiometers (MWRs) and/or sounders (MWSs). The frequent measurement will be achieved by constellation satellites, and the accurate measurement will be achieved by the DPR with high sensitivity and dual frequency capability. The GPM core observatory is jointly developed by National Aeronautics and Space Administration (NASA) and JAXA. NASA is developing the satellite bus and GPM microwave radiometer (GMI), and JAXA is developing the DPR. The DPR consists of Ku-band (13.6 GHz) radar suitable for heavy rainfall in the tropical region, and Ka-band (35.55 GHz) radar suitable for light rainfall in higher latitude region. Drop size distribution information will be derived which contributes to the improvement of rainfall estimate accuracy. DPR will also play a key role to improve rainfall estimation accuracy of constellation satellites. DPR proto-flight test at JAXA Tsukuba space center has been completed in February 2012. The DPR has handed over to NASA and integrated to the core observatory in May 2012. The system test of the core observatory has completed in November 2013 and DPR test results satisfied its system requirements. The core observatory was shipped to launch site of JAXA Tanegashima space center in Japan. Launch site activities have started on November 2013 and GPM core observatory will be launched in early 2014. DPR orbital check out will be started in March 2014 and it will be completed in April 2014. In this presentation, the orbital check out status of DPR will be reported.