



## **Raindrop Size Distribution Observation for GPM/DPR algorithm development**

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In order to evaluate and improve the accuracy of rainfall intensity from space-borne radars (TRMM/PR and GPM/DPR), it is important to estimate the rain attenuation, namely the  $k$ - $Z$  relationship ( $k$  is the specific attenuation,  $Z$  is the radar reflectivity) correctly. National Institute of Information and Communications Technology (NICT) developed the mobile precipitation observation system for the dual Ka-band radar field campaign for GPM/DPR algorithm development. The precipitation measurement instruments are installed on the roof of container. The installed instruments for raindrop size distribution (DSD) measurements are 2-dimensional Video disdrometer (2DVD), Joss-type disdrometer, and Laser Optical disdrometer (Parsival). 2DVD and Parsival can measure not only raindrop size distribution but also ice and snow size distribution. Observations using the mobile precipitation observation system were performed in Okinawa Island, in Tsukuba, over the slope of Mt. Fuji, in Nagaoka, and in Sapporo Japan. Using these observed DSD data in the different provinces, the characteristics of DSD itself are analyzed and the  $k$ - $Z$  relationship is estimated for evaluation and improvement of the TRMM/PR and GPM/DPR algorithm.