



## **Radar Reflectivity and Specific Attenuation in Melting Layer measured with Ground-based Ka-Radar System**

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The scattering/attenuation characteristics of Ka-band radiowaves are measured with a dual Ka-band radar system which has been developed by JAXA. The dual Ka-band radar system consists of two nearly identical Ka-band FM-CW radars, and the precipitation systems between two radars are observed in opposite directions. From this experiment, equivalent radar reflectivity ( $Z_e$ ) and specific attenuation ( $k$ ) are simultaneously obtained. Since calculation of  $k$  includes double differences along the radio path, the result is sensitive to the experimental parameters. Parameter tunings in data analysis including small change of radar elevation angles, etc are applied. After the parameter tuning, the  $k$  and  $Z_e$  are reasonably obtained for clear melting layers, where  $Z_e$  has a shape of a shelf, and  $k$  had a peak at the shoulder of the shelf. The results are qualitatively consistent with ground-based particle measurements. The results are used to evaluate the scattering/attenuation assumptions in the dual-frequency precipitation radar (DPR) aboard the Global Precipitation Measurement (GPM) core satellite.