

# **Improvement of precipitation type classification for spaceborne radars using a ground-based doppler radar over the Tibetan Plateau**

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## **Abstract**

Vertical air motion should be used for determining the type of precipitation, but in many cases the only information available is radar reflectivity. The classification algorithm of TRMM PR and GPM DPR also uses only radar reflectivity, leading to misclassification especially over Tibetan Plateau in summer season. In this study, we examined the classification of precipitation type estimated by the spaceborne radars using NASDA X-band doppler radar observation on Tibetan Plateau in the GAME-Tibet project. On August 1, 1998, when NASDA radar and PR observations were simultaneously conducted, the PR's precipitation type was mostly classified as stratiform precipitation in the NASDA radar coverage. On the other hand, NASDA radar shows the vertical profile of the horizontal wind divergence provided by Velocity Azimuth Display (VAD) method (Mapes and Lin 2005) indicates mainly convective. This misclassification may be because of the fact that the threshold (40 dBZ) for determining convective precipitation in the PR's precipitation type classification algorithm was obtained over the tropical ocean and does not sufficiently take into account regional characteristics over the Tibetan Plateau.