

Distribution of intense ice precipitation as seen with the GPM Dual-Frequency Precipitation Radar (DPR)

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Measurement of ice precipitation (snow, graupel, and hail) with the Dual-Frequency Precipitation Radar (DPR) is one of the objectives of the Global Precipitation Measurement (GPM) mission. A flag that indicates the existence of intense ice precipitation above -10 degree C height is added in the version 5 DPR products. This flag is called flagHeavyIcePrecip and is set for an angle bin in which an intense radar echo or a large measured dual-frequency ratio (DFRm) is observed above -10 degree C level. The flag is set not only by hail or graupel but also by heavy falling snow.

The distribution of the pixels whose flagHeavyIcePrecip values are non-zero is examined. Relatively dense distributions are found in areas where thunderstorm activities are frequent. In addition, the flag is often set in high latitudinal areas where heavy snow storms are observed. The flags in the latter case are predominantly set by the DFRm condition rather than the intense radar echo condition. The characteristics of storms with intense ice precipitation are examined by taking into account the differences between these two conditions.

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