Investigation of possible method for classifying the cloud types using a disdrometer

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Abstract

Information on the raindrop size distribution (RDSD) is essential for understanding precipitation microphysics and estimating rainfall. The variability of precipitation is directly linked to the variance of RDSD which is highly variable in space and time.

Strong convective rain usually contains both large and small drops and stratiform rain usually contains relatively larger drops but has a low number concentration for a given rain rate.

The gamma distribution with three parameters is capable of describing a broader range of RDSD than an exponential distribution and used to classify the cloud types.

An observed dramatic change in the N_0 intercept parameter with little change in rainfall rate is suggestive of a transition from rain of convective origin to rain originating from the stratiform portion of tropical systems in the precipitation case of Taramajima, Okinawa, 2007.

In this study, an empirical stratiform-convective classification method based on the relation between intercept and rainfall rate is presented the possible method in investigated for classifying the cloud types using RDSD information from disdrometers installed during SoWMEX/TiMEX period in 2008.