Raindrop Size Distribution Observed during SoWMEX/TiMREX

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Recent numerical studies show that the quantitative precipitation forecast result is heavily dependent on the prescription of the microphysical parameters in the model. Similar rainfall intensity may possess very different raindrop size distribution (RDSD).

The present study is using POSS (Precipitation Occurrence Sensing System) and JWD (Joss-Waldvogel disdrometer) to analyze the RDSD during the SoWMEX/TiMREX period. NCAR SPOL is also used to delineate the reflectivity profiles of stratiform and convective precipitation. The data set has been divided into four sub-regimes according to the prevailing southwesterly flow characteristic derived from Pingtung sounding station. The separation of stratiform and convective types of precipitation is based on Bringi el al. (2003) technique, which is using POSS derived rainfall as the separation parameter.

The result shows the RDSD of stratiform precipitation is consistent with Bringi et al. (2003), i.e., the generalized intercept (Nw) and the median volume diameter (Dm) reveals a straight line with negative slope during the whole period of the experiment. The SPOL reflectivity profile shows a pronounced bright band characteristic. The result shows the RDSD of convective precipitation has bigger (smaller) drops and less (more) numbers than the maritime convection (continental convection) as indicated by Bringi et al. (2003).