

Raindrop Size Distribution Characteristics of Typhoon and Non-typhoon Precipitations Observed over North Taiwan

Jayalakshmi JANAPATI¹, Balaji Kumar SEELA^{1,2}, Pay-Liam LIN^{1*}, Pao WANG^{2,3}

¹National Central University, Taiwan, ²Academia Sinica, Taiwan, ³University of Wisconsin-Madison, United States

Raindrop size distribution (RSD) characteristics of typhoon (TY) and non-typhoon (NTY) precipitations of summer season are quantified by considering the long-term observational data (2002 to 2015) from Joss–Waldvogel disdrometer, located at National Central University (24° 58' N, 121° 10' E), Taiwan. RSD stratified on the basis of rain rate showed clear differences in RSD of TY and NTY rainfall. TY rainfall is associated with more number of small drops and less number of large drops than NTY rainfall. RSD features in terms of gamma parameters are studied for these two rainfall regions. NTY rainfall is characterized by higher mass weighted mean diameter (D_m) and lower normalized intercept parameter (N_w) than TY rainfall. Precipitating cloud classification into stratiform and convective regimes showed large D_m in NTY compared to TY precipitation for both regimes. Distinct variations in radar reflectivity (Z) and rain rate (R) relations ($Z = A \cdot R^b$) between TY and NTY rainfall are noticed.