



Polarmetric radar rainfall estimate and precipitating cloud microphysics study in Taiwan

P.-L. Lin(1), T.C. Chen Wang(2), Y.-C. Liou(3)

Department of Atmospheric Sciences, National Central University

Taiwan area has been suffered from the Typhoon, heavy rain, and thunderstorm in past few years. However, because of the different rain drop distribution characteristics of each rainfall event, the variation of the relations between radar reflectivity and the rainfall rate estimation (Z-R relation) is quite large. So the single formula for the Z-R relation often underestimates the rainfall during heavy rain. The complex terrain also cause ground clutter and the blocking of radar beam energy, these factors also induce rainfall all estimate errors. In order to promote the ability of rainfall estimation by radar, National Central University had upgraded the NCU Doppler radar to Doppler/dual polarimetric radar successfully. The past few years the polarimetric variables observed by this new kind radar have provided drop size distribution, drop oblateness, and hydrometeor types in a precipitation system. The real time drop size distribution from distrometer has been used to calibrate the new polarimetric radar. This study has also provided the polarimetric radar data, been developing the best rainfall rate estimation procedure, maintaining the NCU polarimetric radar.