



Application of disdrometer and dual polarimetric radar observations to improve the quantitative precipitation estimation in Taiwan

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High resolution rainfall estimation is very important for hydrological application in disaster mitigation. Weather radar net work in Taiwan has been established by Central Weather Bureau since 2001. A very dense automatic rain gauge network has also been implemented over the whole island. However, because of the mountainous terrain, in many remote areas, the rain gauge number is not enough. Radar rainfall estimate can compensate the lack of rainfall observation in the rain gauge data void region. Due to the different drop size distributions of different types of rainfall, the radar rainfall estimate relations with the reflectivity subsequently are various. A disdrometer network including two 2DVDs and six impact disdrometers have been deployed in the northern part of Taiwan. A new type of weather radar-polarimetric radar can retrieve the drop size distribution from the polarimetric variables, it also can provide more correct rainfall estimate than the conventional weather radar. The main goal of this study is to develop the optimum rainfall algorithm by using the disdrometers and polarimetric radar data. Based on the past two years studies, the combination of raingauge, disdrometer and polarimetric radar can provide better rainfall estimate calibration.