



Weather radar and heavy rainfall - how to estimate the real amount of precipitation?

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ABSTRACT

Extreme precipitation often occurs on relatively small areas which are not sufficiently equipped with rain gauges to completely observe the occurred event. Therefore, radar data are extremely helpful to localise the most intense parts of the precipitation. However, radar data are prone to errors under extreme rainfall and bear higher uncertainties at higher rainfall intensities due to the non-linearity of the relationship between radar reflectivity and rainfall intensity and due to the unknown drop-size distribution of the rain cells. A case study illustrates a practical approach to test several assumptions on the drop-size distribution and important radar data quality considerations for high intensity precipitation.

KEYWORDS

Extreme events, radar rainfall, rain gauges, sparse network