

Error analysis of quantitative precipitation estimates from NCAS's X-band polarimetric radar.

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The first scientific deployment of the National Centre for Atmospheric Science (NCAS) mobile X-band polarimetric, Doppler weather radar was during the CONvective Precipitation Experiment (COPE) in South West England, summer 2013. NCAS deployed the mobile radar alongside other ground-based instrumentation and operated in conjunction with research aircraft from the UK Met Office and the University of Wyoming, to observe convective showers initiated along convergence lines which commonly form along the Cornish peninsula. Here we present an error analysis of quantitative precipitation estimates (QPE) obtained from the COPE mobile radar observations. Records from the Environment Agency's tipping bucket rain gauge network and the UK Met Office C-band weather radar network have been used as comparison data sets for the X-band data. The presentation will detail the application of processing algorithms to identify ground clutter and correct for attenuation, partial beam blockage, constant Z-R relationships and vertical changes in reflectivity and the improvements observed in QPE following these corrections.