



Fifteen years of dual polarimetric observations of tropical convection: The CPOL data set.

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The use of polarization diversity to measure properties of hydrometeors is not new and was first mentioned by Seliga and Bringi from an engineering perspective in 1976 and by Hendry et al (again in 1976) from a measurement perspective shortly thereafter. In the forty years that have passed since these accomplishments there have been several key data-sets that have guided the development of retrieval science and the use of polarimetry in understanding the nature of precipitation. One such data set has been collected using the C-Band POLarimetric radar (Keenan et al, 1998), which collected 15 years of observations of break/buildup and monsoon season phenomena when it was sited 23km from Darwin, Australia. This presentation will report on the progress of a collaboration aimed at producing a quality controlled set of polarimetric measurements and microphysical retrievals for this 15-year data set. Techniques such as calibration offset, specific differential phase and attenuation retrieval and comparison with disdrometer measurements (via scattering calculations on collected drop size distributions) will be covered including contrasting several different open source approaches.

Seliga, T.A., Bringi, V.N., 1976. Potential Use of Radar Differential Reflectivity Measurements at Orthogonal Polarizations for Measuring Precipitation. *J. Appl. Meteor.* 15, 69–76. doi:10.1175/1520-0450(1976)015<0069:PUORDR>2.0.CO;2

Hendry, A., McCormick, G.C., 1976. Radar observations of the alignment of precipitation particles by electrostatic fields in thunderstorms. *Journal of Geophysical Research* 81, 5353–5357. doi:10.1029/JC081i030p05353

Keenan, T., Glasson, K., Cummings, F., Bird, T.S., Keeler, J., Lutz, J., 1998. The BMRC/NCAR C-Band Polarimetric (C-POL) Radar System. *Journal of Atmospheric and Oceanic Technology* 15, 871–886. doi:10.1175/1520-0426(1998)015<0871:TBNCBP>2.0.CO;2