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CLOUD PROPERTIES IN A MONSOON ENVIRONMENT

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Résumé :

Darwin, North Australia is under the influence of a classic monsoon regime with periods of widespread convection with a largely oceanic character interspersed with “break” periods where convection is suppressed on the large scale but there are plentiful intense storms triggered by local circulations. Other intermediate large-scale regimes have also been identified for this region, which provides a comprehensive framework for our studies.

Darwin also has what is probably the most comprehensive observing network anywhere in the tropics with a polarimetric weather radar, operational Doppler radars, an ARM site with cloud radars, lidars etc, 50 and 920 MHz wind profilers and the Bureau’s operational network. The facilities have also recently been augmented with significant aerosol and greenhouse gas sampling.

This talk will provide a brief overview of the facilities, noting the data are freely available, a brief summary of some of the recent research areas and more detailed discussion of the variability of the cloud macro and microphysical properties as a function of the large scale regime. This latter work is linked with the development of new approaches to convection and cloud parameterisation.