

***VARIABILITY IN RAINFALL DROP-SIZE DISTRIBUTIONS OBSERVED  
AT THE DARWIN ARM SITE***

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**ABSTRACT**

The variability of rainfall drop-size distributions as a function of large-scale atmospheric conditions and cloud/storm characteristics is investigated using observations from the Atmospheric Radiation Measurement (ARM) program's research facility at Darwin, Australia. Drop-size distribution observations are obtained from an impact disdrometer over four years (2006-2010) including the YOTC. The suite of complementary long-term observations from the ARM suite of instruments, including a millimeter cloud radar, micropulse lidar, ceilometers, microwave radiometer, radiosondes, solar and infrared radiometers, etc...provide a means to describe the cloud and storm characteristics and the local atmospheric state and partition the statistics of drop-size distribution observations. Larger-scale precipitation radar and satellite observations will also provide a context for partitioning the drop-size distribution variability at different scales.