

***A WARM CLOUD MICROPHYSICAL DATASET BASED ON
ARM KA- AND W-BAND CLOUD RADARS***

Dong Huang, Yangang Liu, Michael Jensen, and Warren Wiscombe

For presentation at
The Second Science Team Meeting of the
Atmospheric System Research (ASR) Program,
San Antonio, TX
March 28-April 1, 2011

**Environmental Sciences Department/Atmospheric Sciences Division
Brookhaven National Laboratory**

**U.S. Department of Energy
Office of Science**

ABSTRACT

Microwave attenuation is directly proportional to cloud liquid water content (LWC) and can be calculated accurately from dual-frequency radar measurements. The dual-frequency radar attenuation approach, unlike Z-LWC approaches, makes no assumptions about the cloud drop size distribution. This poster shows that, by combining this simple physics and advanced mathematical inversion techniques, accurate retrieval of vertically resolved cloud LWC can be obtained using operational ARM Ka- and W-band cloud radars. We have applied the dual-frequency approach to retrieve microphysical properties of warm clouds using the ARM radar observations from 2006 to 2008. This poster will present the comparisons between the dual-frequency and the MICROBASE cloud retrievals.