

Title: Supersaturation in Tropical Storms Measured during CAMEX-3 and CAMEX-4

Authors:

Robert L. Herman (1), Andrew J. Heymsfield (2), Leonhard Pfister (3), T. Paul Bui (3), Jonathan Dean-Day (3), Cynthia H. Twohy (4), Kevin Noone (5)

- (1) Jet Propulsion Laboratory, California Institute of Technology
- (2) NCAR
- (3) NASA Ames Research Center
- (4) Oregon State University
- (5) Stockholm University

Abstract:

The meteorology and cloud microphysics of hurricanes were studied during NASA's Third and Fourth Convection and Moisture Experiments (CAMEX-3 and CAMEX-4) in the summers of 1998 and 2001, respectively. In-situ instrumentation on the NASA DC-8 aircraft included the JPL Laser Hygrometer, the Meteorological Measurement System (MMS) for measurements of pressure, temperature, and winds, a 2DP particle spectrometer, a Cloud Particle Imager (CPI), and for measurements of cloud water content, a Counterflow Virtual Impactor (CVI) and a Nevzorov Probe. On several flights, the DC-8 intercepted intense updrafts in the upper levels of tropical storms. Within these updrafts were ice particles and significant supersaturations (10 to 20% or more). This paper will examine the supersaturations and particle properties within updrafts to better understand the evolution of ice particles in tropical storms.