

Microphysics of Maritime Tropical Convective Updrafts at Temperatures from -20 to -60C and the Role of Dust

Andrew Heymsfield
NCAR, MMM Division
Boulder, Co.

Abstract:

We use aircraft data on ice particle and water droplet size distributions from seven field campaigns, combined with remote sensing data and a numerical model, to characterize the microphysical properties and processes in deep, tropical maritime clouds. Convection is sampled in pristine to heavily dust laden maritime environments and in single updrafts to hurricanes with peak updraft velocities reaching 25 m/s. Precipitation efficiency and the influence of dust on the microphysical and radiative properties are evaluated.