Date: November 9th

Time: 11:00 AM

Location: Maryland Hall 110

Speaker: Dr. Jonathon Wright

Columbial University

Title: *"The role of ambient relative humidity in regulating water vapor changes in the tropical upper troposphere: An observational constraint for GCMs"*

Abstract

Understanding the interactions of tropical deep convection and upper tropospheric humidity has proved to be a critically important step toward the development of more accurate climate models. Recent studies have indicated that the degree of moistening due to convective detrainment is intrinsically tied to ambient relative humidity (RH). Here we examine the ways in which ambient RH influences the efficiency of convective moistening in the tropical upper troposphere using data from the Tropical Rainfall Measuring Mission Precipitation Radar and the Atmospheric Infrared Sounder, and identify the spatial and temporal limits of this interaction. We further evaluate these observational results in the context of a simple model that includes only large-scale advection and condensation. I will conclude by discussing this method's potential application as an observational constraint for climate model parameterizations of deep convective detrainment in the tropics.