

## **VERTICAL STRUCTURE OF CONVECTIVE SYSTEMS IN AMAZONIA DURING TRMM-LBA**

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During the wet season TRMM field campaign in Rondônia, Brazil, a variety of convective systems were sampled by surface radars, soundings, the TRMM satellite, and the GOES-8 geostationary satellite during January and February 1999. Local variations in the local wind and humidity field have been attributed in part to synoptic-scale phenomena, most conspicuously the establishment of stationary frontal systems penetrating into the tropics. These baroclinic systems induced periodic episodes of low level moist, westerly flow across Rondônia during the experiment, interrupting the easterly flow across the Amazon Basin. This westerly flow feature may be an important component of the South American climate system, by transporting tropical moisture to the middle latitudes. Other large scale influences on the wind field over Rondônia included westward propagating upper-tropospheric cyclones, which originated over Northeast Brazil.

This paper presents statistics on the vertical structure of precipitation (inferred by radar reflectivity) of the convective and stratiform components of all mesoscale convective systems observed during TRMM-LBA. Results suggest that convection is shallower and less vertically developed during westerly wind periods, consistent with studies by other investigators on differences in the draft structure and lightning characteristics of convection in both wind regimes. When combined with previous analysis of the rain intensity, rain area, and convective-stratiform fraction of systems in both regimes, it appears that mesoscale properties of convection in southwestern Amazonia are fundamentally linked to changes in the large-scale circulation. A goal of this study is to work toward a basis for which to parameterize the effects of mesoscale convection on large-scale features of the South American climate system.