

Tropical Cloud Processes : First Results from CHUVA Project.

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CHUVA is a project that will carry out seven field experiments to investigate the different precipitation regimes in Brazil. The objective of the field campaign is to collect information about the cloud processes of the main precipitating systems over Brazil to evaluate and improve quality precipitation estimation and the knowledge of cloud microphysical process. The project intend to cover different types of precipitation regimes, but the main focus are the warm clouds, the analysis will be performed considering the microphysical and precipitation evolution during the cloud life cycle and the development of thunderstorms. Four field campaigns have already been realized in the following places: Alcantara (MA), Fortaleza (CE), Belem (PA) and Vale do Paraíba (SP). The first three campaign were held in tropical region, on the coast, from the Amazonia to the semi-arid in the Northeast Brazil. The fourth campaign was held in a valley between two mountains, around 100 km far from the ocean. This campaign was jointed with the GOES-R Geostationary Lightning Mapper - pre-launch algorithm validation. 3-D Lightning Mapping Array, LINET, high speed digital video, X-Dual-Pol radar, Micro Rain Radar, disdrometer and several others instruments were employed during all the rainy season. This study describes the preliminary results for these experiments. A description of the cloud liquid water and DSD as function of the region, rain rate and cloud type, the cloud processes changes during the life cycle, some examples of the electrification process and reflectivity and ZDR profiles are described.