Cloud and Precipitation: The Influence of Surface type, Aerosol and Thermodynamics.

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ACRIDICON-CHUVA was part of the Green Green Ocean Amazon, GOAmazon, intensive field campaign, during September - October 2014, the IOP2. The ACRIDICON-CHUVA aim at the elucidation and quantification of aerosol-cloudprecipitation interactions and their thermodynamic, dynamic and radiative effects in convective cloud systems by in-situ aircraft observations combined with indirect measurements and numerical simulations. Specifically, this study evaluate the following specific objective: Are the cloud processes over forest and deforested regions statistically different? This study employs the SIPAM S band radar, disdrometers, CCN counters, radiosondes and data collected by HALO airplane. As ancillary data, it was emplyed the Shuttle Radar Topography Mission, the TERRACLASS (INPE) and EVI from Modis for surface topography, surface type classification and vegetation index, respectively. Cloud and precipitation are studied as function of aerosol concentration as well as surface type and thermodynamic properties. Different sensors and space-time scales are employed to compare the life cycle and cloud size distribution using radar for different atmosphere conditions. The droplet size distribution and thermodynamics variables from the HALO airplane are employed to evaluate the effects on the clouds and precipitation over forest and pasture. The flight AC17, specifically designed for this matter, is eavaluate in this study.