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The CHUVA Project: First results and implications to satellite precipitation estimation

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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. This study describes the preliminary results for these experiments. In all regions it was observed several cases of large amount of precipitation observed by the radar, but none or only few millimeters were estimated by IR or microwave satellites sensors.