Continental Tropical Convergence Zone (CTCZ) - Pilot Campaign During 2009: Initial Results

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The Continental Tropical Convergence Zone (CTCZ) is a sub-program under the Indian Climate Research Program (ICRP). It is a multi-institutional programme planned and executed by the Indians to understand monsoon rainfall variability in the monsoon zone over the Indian sub-continent. CTCZ objectives will address physical processes taking place on synoptic, meso, cloud and cloud microphysical scales and their interactions. Monsoon involves land-ocean-biosphere-atmosphere interactions and their feedbacks, and these issues are given importance in CTCZ. The direct and indirect effects of aerosols on monsoon variability on different time scales are among the objectives of this study. Special efforts will be made to elucidate the nature of the cloud systems over land and measure critical components of water and heat balance in selected basins/watersheds in the monsoon zone to understand the impact of land surface processes and gain insight into genesis of cloud systems and their propagations over land and ocean. CTCZ is a multi-year programme involving special field experiments over land and ocean, in situ cloud observations with instrumented aircraft, analysis of existing data from conventional platforms as well as satellites, buoys, ARGO floats, and theoretical/ numerical model studies with the active participation from all concerned institutions in India.

A pilot phase of CTCZ was implemented during 01 July to 31 August 2009 utilizing most of the existing observational weather monitoring networks including Radars, aerosols, agro meteorological stations, met-ocean data buoys, Argo floats and drifters, two ships (ORV Sagar Kanya and OTV Sagar Nidhi), two aircrafts with state-of-the art instrumentation, additional radiosonde systems at Kharagpur and over northern Bay of Bengal, three micrometeorological towers (Kharagpur, Ranchi, and Anand), stand-alone atmospheric observing systems (ex. Micropulse Lidars, Sodar, Desdrometers, etc) at few locations north of 18^{o}N, upto foothills of Himalayas. This presentation will provide an overview of the CTCZ scientific objectives, implementation strategy, resource mobilization, infrastructure deployed, in-situ data collation, and some initial results.