## Aircraft Observations of Cloud Droplet Size Distributions over Indian Region during Monsoon-2009

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A national level observational experiment called Cloud Aerosol Interaction and Precipitation Enhancement Experiment (CAIPEEX) has been conducted during May-September 2009. In this experiment an instrumented aircraft was used to collect the in situ observations of aerosols and cloud microphysical parameters viz. liquid water content, total water content, concentration of Cloud Condensation Nuclei (CCN), concentration of cloud droplets of different sizes, temperature, humidity etc. The different instruments onboard aircraft were AIMMS, Cloud Droplet Probe (CDP), Cloud Imaging Probe (CIP), CCN counter, Gas Analyzer, LWC probe etc. These observations were made at different inland and coastal stations and also over the coastal oceanic regions. The observational program was started before the onset of the south west monsoon (17 May 2009) over India and continuous observations were collected till last week of September. The experiment was conducted in mission mode and the selection of the base stations was done in such a manner which facilitated to collect aerial observations over entire India and also coastal oceanic regions. The base stations included were: Pune, Pathankot, Bengaluru, Hyderabad, Bareilly and Guwahati. In the present paper an investigation has been made to examine the characteristics of number concentrations of cloud droplets of different sizes at different base stations. The results will be discussed for each base stations and an attempt will be made to examine the influence of the prevailing weather conditions.

Keywords: CAIPEEX, Cloud-Aerosol Interaction; Aircraft observations; Cloud Droplet Spectra; Number Concentration; Effective Radius