

Tropical Indian Cloud Characteristics: Insights from Cloud radar observations

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Indian Institute of Tropical Meteorology (IITM)'s Cloud (Ka-band) radar has been operating for understanding the interaction between Cloud and Environment for formation of Precipitation. IITM's Mobile Ka-band Scanning Polarimetric Radar (KaSPR) operations started, initially at Pune, during May 2013. KaSPR is cloud radar operating at 35.2 GHz with average powers of 60-90 W. It is having sensitivity of the order -45 dBZ at 5 km. KaSPR has been providing high sensitivity versatile measurements of cloud and precipitation at tropical site (Manderdev, 18.04290 N, 73.86890 E, 1.35 km AMSL) from a scanning mobile platform since Jun, 2013. The initial results of the KaSPR observations on cloud systems over a tropical location(s) has been analyzing to find out the characteristic difference between tropical Non-monsoon and Monsoon clouds especially with the time, height profile of Co-pol and Cross-pol reflectivity's as well as other dynamical and microphysical related parameters from the radar. It has been noticed that relatively stronger reflectivity associated with monsoon cloud systems at higher altitudes and non-monsoon cloud systems are noticed to confine below 6-8 km with occasional conspicuous features of strong cross- to co-pol values greater than -20 dB at altitude of ~4 km. The initial results of the above cloud radar observations on Indian monsoon will be discussed.