

## **A Study on Thunderstorm Activity over North-Eastern India**

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Yogi Vemana University's Atmospheric research team participated in the National field campaign of Severe Thunderstorms – Observational and Regional Modeling (STORM) by deploying Micro Rain Radar and Laser Disdrometer for 45 days from 15 April to 31 May 2009 at Guwahati Airport. In addition, India Meteorological Department (IMD) network of meteorological sensors data, X-band Radar data and Radiosonde data also collected during STORM period.

During STORM-2009 the occurrence of Hail/ Squall / Gusty winds are not reported. PARSIVEL Disdrometer and Micro Rain Radar (MRR) captured 24-precipitating cloud systems during STORM-2009 over North Eastern Region (NER). 10-Precipitating events are associated with Thunderstorm (TS) activity and 14-Non-Thunderstorm (NTS) Precipitating. Rainfall intensity is greater in TS days compared to NTS days. Maximum Rainfall in TS is 59.9 mm on 09-05-2009 & Maximum Rainfall in NTS days is 15.0 mm on 17-4-2009. Weather system Associated with TS days prior to 9th May is cyclonic circulations over SHWB and adjoining area extended up to 0.9 and 1.0 km msl, respectively. Weather system Associated with NTS days associated with either E-W trough in lower levels running from SHWB and adjoining area to North-east Assam or Cyclonic circulation/trough in westerly seeing along same locations. The case of more NTS days is seems to be associated with this East-West trough in the lower levels of Atmosphere. The weather systems like cyclonic circulations is seems to be in-situ generated over SHWB and adjoining Area (long 88deg. E to 90 deg. E). Such systems are also seen moving eastward. If this systems persist more than one day rainfall occurrence over North-East Region is expected in Association with Thunderstorm activities. Thunderstorm activities is seen less because of less frequency when E-W trough is prevailing over the region and frequency increases along with N-S orientated trough.