

## MM5 in Simulating Tropical Precipitation Systems in and around Bangladesh

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Mesoscale convective systems (MCSs) produce a broad range of severe convective weather events that are potentially damaging and dangerous to society in general. Even though the importance of MCSs is well understood in mid-latitude, there is much left to learn about the growth and development of these systems. In and around Bangladesh a number of MCSs developed during the summer monsoon period that produces heavy precipitation in this region. Due to the lack of observational data, simulation of MCSs is one of the ways to understand its growth and development. In this direction mesoscale regional model (MM5) of the NCAR/PSU is employed to analyze a case study in pre-monsoon case on 1 April 2002. The MM5 is selected because it is a tried and tested purpose built regional-scale model used for numerous modeling studies over many different regions of the globe, both tropics and extra-tropics. In this work a MCS was simulated that developed on 1 April 2002 and covers almost the Bangladesh and parts of India in the NE side of Bangladesh. Two cells start to develop at 06:30 LST one at location 25.4N, 92E and the other at 23N, 91.4E. At 08:00 LST more two cells developed and they became clusters at 12:00 LST. After one hour later 2, clusters merged and all merged at 15:30 LST to form a MCS. The MCS became mature at about 23:00 and after that it became in dissipating stage. The Bangladesh Meteorological Department (BMD) radar detects echo in the development side of the MCS. The TRMM 3B42 products also detected heavy rain in the MCS development region. Different meteorological parameters simulated by MM5 are analyzed to understand the development mechanism of the simulated MCS which is a merger type MCS. A number of cases will be analyzed and the summery will help us to understand the behavior of MCS in this region.