

ABSTRACT

CHARACTERIZING THE ONSET OF SOUTHWEST MONSOON OVER MYANMAR USING REGCM3

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Monsoon is a seasonal change in the direction of the prevailing wind that typically brings about changes in local weather. Life is critically dependent on the monsoon rains in countries in the tropics and the subtropics, like Myanmar. Thus this study was undertaken to characterize the onset of the southwest monsoon and other coincident weather or climate variables, such as rainfall, wind speed, and wind direction. The Regional Climate Model version 3 (RegCM3) was run for a period of 10 years (2000-2009) to simulate the meteorological fields with domain centered in Myanmar from April 7 to July 1. The input data were derived from the reanalyzed datasets of the National Center for Environmental Prediction (NCEP) and National Center for Atmospheric Research (NCAR). The simulations were done with 45-km horizontal resolution applying the Grell scheme with Arakawa closure for cumulus parameterization. The onset of southwest monsoon was confirmed when the prevailing wind direction up to 600 hPa level had shifted from northeasterly to westerly or southwesterly. The southwest monsoon first arrived at Kawthoung which is the southernmost station of Myanmar and progressed through the deltaic and central parts until it reaches Putao which is the northernmost station. Over the simulation period, the onset of southwest monsoon progressed from the southernmost to northernmost parts of the country in 19 ± 10 days. The position of Intertropical Convergence Zone (ITCZ) appeared (23°N to 28°N) over the northern part of the country before the onset. Furthermore, the 500 hPa ridge appeared consistently over the deltaic area of Myanmar 6 to 10 days before the onset of the monsoon. Its position is about 6° to the south of the ITCZ.