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Title: Characteristics of Monsoon Rainfall around the Himalayas Revealed b Precipitation Radar

Abstract:

The Tropical Rainfall Measuring Mission (TRMM) was launched in Nov and since then it is providing continuous observations. Its Precipitatio (PR) proved to be useful than several ground based radars in terms o capability to detect three-dimensional structure of precipitation behin mountains. A study presented here includes the climatological feature diurnal cycle by utilizing hourly, 0.05 deg. x 0.05 deg. grid, near surfa rainfall data by PR during June/July/August of 1998-2002 around the Himalayas. Our selected domain falls under the regions where precipi characteristics including diurnal cycle of rainfall are not well studied. complexity of the orography as well as financial constraints are behin poor arrangement of rainfall monitoring network. For the circulation f GEWEX Asian Monsoon Experiment (GAME) data were utilized. A cent purpose of this study is to quantify small scale precipitation features associated mechanism. Analysis of precipitation characteristics preser here, is based on two rain rate thresholds. a) light rain rate (<=5 mm and b) moderate to heavy rain rate (> 5 mm/hr). The results suggest mostly light rainfall found during JJA around the Himalayas. However, afternoon to evening rainfall is noticed as embedded convection. The precipitation broadening and movement are noticed during midnight- morning over south-facing slopes of the Himalayas. The moderate to rain exhibits relatively stronger diurnal cycle of precipitation over sou facing slopes of the Himalayas. The climatological diagnostic studies f GAME Reanalysis suggests that near surface positive advection of mo warm temperature in combination with increased mid level moisture relatively strong cyclonic circulation in the lower atmosphere assist in development of convection during midnight-early morning hours over facing slopes of the Himalayas.

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