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Preferred regions of extreme rain events of Indian summer monsoon evolving with changing climate

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The current scenario is that increasing Extreme/Intense Rain Events contribute significantly to the Seasonal rainfall of Indian Summer monsoon. An attempt has been made here to extract the preferred regions of Extreme Rain Events of the Indian summer monsoon during the twelve years period from 1999 to 2010 based on TRMM 3B42 precipitation data (at 0.25^{o} X 0.25^{o} resolution and 3 hourly interval) over both Land and Sea. To begin with, Rain events have been constructed around their maxima to obtain events duration and the corresponding accumulated Rainfall. The Criteria for extracting Intense, Extreme and Moderate Rain Events have been devised, based on thresholding technique, considering only the homogeneous rainfall region of Central parts of India [16.5N-26.5N:74.5E-86,5E]. The thresholds have been devised based on the accumulated Rainfall of the events normalised with duration. All India Rain Events (ERE) have been segregated in to Moderate, Intense and Extreme Rain Events (ERE) based the thresholds devised for the homogeneous region of Central India. The accumulated rainfall associated with EREs are in range, 142 - 716 mm. The striking inference is that three broad prominent regions have been inferred for occurrence of EREs, namely, the 1. West Central Parts of India and the adjoining Arabian Sea (WCI region), 2. Central and North Central parts of India (CI region) and 3. North-Eastern parts of India and the adjoining northern Bay of Bengal (NEI region). The preferred regions for clustering of High (Low) end of EREs are NEI and WCI regions (CI region). WCI region has been noticed to be the preferred region of ERE's from 2003 onwards only. A handful of EREs occurred over West-coast of India through out the period. The Eastern parts of Southern Peninsular India, being the low rain zone of the monsoon season, is observed to be a permanent void region for EREs during the study period.