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Summary

The South West of Western Australia (SWWA) has been of interest to researchers due to the significant decline of rainfall in this region since the 1910s. SWWA depends on the winter rainfall for meeting its agricultural water requirements and town water supply. A decrease in rainfall has adverse impacts on these sectors. The decreasing trend has been attributed to the decrease in interactions between the cloud bands and cold fronts, and the major changes in the large scale atmospheric circulation in the Indian Ocean region (IOCI, 2002). Changes in precipitation of different intensities have not yet been examined in detail for this region. This is important because heavy rainfall is more likely to produce runoff than lighter rain. The objective of this study is to determine the contribution of each of three types of rainfall, namely light, medium and heavy rainfall to the total decline in rainfall in the study area, in terms of both the amount of rainfall and frequency of occurrence of each type. The study also aims to explain the decrease quantitatively in terms of the change in the volume and areal extent of each rainfall type in SWWA. For models to simulate sub-daily rainfall processes, parameters need to be calculated from measured 6-min rainfall data. No study has yet been undertaken to determine the impact of this significant decline of rainfall on sub-rainfall patterns and the parameter values to generate these storm patterns. This study aims to quantify the relationship between the decline in rainfall and the underlying parameters for storm generation at the sub-daily time scale in SWWA.

Research Expertise

- Research collaborator in the research project entitled 'Finer scale rainfall projections for Kerala Meteorological Subdivision by Statistical downscaling of GCM Simulations' (C2/RSM073/2013 dated 29/8/2013) sanctioned by the Centre for Research and Development (CERD) Kerala
- Presented paper titled 'Trend Analysis of Rainfall in Southern Kerala based on Empirical Mode Decomposition' at the ICICES 2016 held at Toc H Institute of Science and Technology, Ernakulum on January 2016
- Presented paper on 'Morphometric Analysis of Kallada and Pallikkal river basins of Kerala' for International Symposium on Integrated Water Resources Management at CWRDM on February 2014
- Underwent practical training for two months at Centre for Water Resources Development and Management, Calicut on the topic 'Hydrologic Characteristics of Selected River Basins in Southern Kerala'.