



Temporal Analysis of Rainfall Trend for Udaipur District of Rajasthan

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Abstract: Climate change for an area is referred to long term changes in hydrological conditions. In the present study, trend analysis in monthly rainfall over the Udaipur district during the period from 1975 to 2013 has been detected for Udaipur district. Udaipur is situated in Rajasthan which is a western state in India, comes under semi-arid area where rainfall is very low as compared to average rainfall of India. Trend in rainfall characteristics were determined by both parametric and non-parametric tests. In parametric test linear regression method has been used and in non-parametric test Mann-Kendall test and Sen's slope estimator test has been used. Based on linear regression method, six months show negative rainfall trend whereas 4 months show positive rainfall trend. Based on this method trend in month of March and September is not clear. Mann – Kendall test indicated that April, May, June, July and September months show increasing trend whereas January, February, March, August, October, November and December months show decreasing trend in monthly average rainfall. Sen's slope estimator gives result only for monsoonal month because rainfall is not linear in non-monsoonal months. The test indicated May, June, July and September months show positive trend in rainfall whereas August month shows negative trend in rainfall. This study may be very helpful in future water resource planning and agriculture planning of this area.

Keywords: Rainfall, Trend detection, Mann – Kendall, Sen's slope estimator, Udaipur
