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**The Investigation of Extreme Precipitation and Temperature Behavior in Kermanshah by Statistic Tests**

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**Abstract**

To doing this study, daily precipitation, minimum and maximum daily data from synoptic Kermanshah station during 1/1/1961 to 31/12/2011 have been used. In order to detection extreme temperature and precipitation, 27 indices recommended by Expert Team Climate Change and Indices (ETCCDI) and 6 other extreme indices have been used. Before any analysis, data have been quality controlled and pert values eliminated from data time series. To investigation climate change occurrence, recommended statistics tests by World Meteorology Organization (WMO) have been used. Two test Cumulative Density Test(CDT) and Worseley Likelihood Ratio Test (WLRT) applied in order to clarify the homogeneity and non homogeneity and jump in the indices time series. The significant of the jump in time series examined by Mann Whitney test and significant trend tested by Mann Kendal. So changing rate of trend for each 33 indices estimated by Sen Estimator. The results showed that cold extreme indices including FD0, TNx, TN10P, TX10P in Kermanshah are decreasing while extreme warm indices SU25, TR20, TX90P, TN90P, WSDI, TMIN Mean and TMAX Mean are increasing. The indices of R5, R10, CWD and PRCPTOTO are decreasing. In 1976 displacement of Kermanshah station occurred that result in jumping of DTR, TN10P and TMIN Mean indices. The behavior of these indices after jumping year is significant.

**Keywords:** Climate Change, Extreme Precipitation and Temperature, Statistical Tests, Kermanshah.

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