

Trend Analysis of Annual Total Precipitation Data in Konya

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Abstract : Hydroclimatic observation values are used in the planning of the project of water resources. Climate variables are the first of the values used in planning projects. At the same time, the climate system is a complex and interactive system involving the atmosphere, land surfaces, snow and bubbles, the oceans and other water structures. The amount and distribution of precipitation, which is an important climate parameter, is a limiting environmental factor for dispersed living things. Trend analysis is applied to the detection of the presence of a pattern or trend in the data set. Many trends work in different parts of the world are usually made for the determination of climate change. The detection and attribution of past trends and variability in climatic variables is essential for explaining potential future alteration resulting from anthropogenic activities. Parametric and non-parametric tests are used for determining the trends in climatic variables. In this study, trend tests were applied to annual total precipitation data obtained in period of 1972 and 2012, in the Konya Basin. Non-parametric trend tests, (Sen's T, Spearman's Rho, Mann-Kendal, Sen's T trend, Wald-Wolfowitz) and parametric test (mean square) were applied to annual total precipitations of 15 stations for trend analysis. The linear slopes (change per unit time) of trends are calculated by using a non-parametric estimator developed by Sen. The beginning of trends is determined by using the Mann-Kendall rank correlation test. In addition, homogeneities in precipitation trends are tested by using a method developed by Van Belle and Hughes. As a result of tests, negative linear slopes were found in annual total precipitations in Konya.

Keywords : trend analysis, precipitation, hydroclimatology, Konya

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