

Analyses of Reference Evapotranspiration in West of Iran under Climate Change

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Abstract : Reference evapotranspiration (ET_0) is an important element in the water cycle that integrates atmospheric demands and surface conditions, and analysis of changes in ET_0 is of great significance for understanding climate change and its impacts on hydrology. As ET_0 is an integrated effect of climate variables, increases in air temperature should lead to increases in ET_0 . ET_0 estimated by using the globally accepted Food and Agriculture Organization (FAO) Penman-Monteith (FAO-56 PM) method in 18 meteorological stations located in the West of Iran. The trends of ET_0 detected by using the Mann-Kendall (MK) test. The slopes of the trend lines were computed by using the Sen's slope estimator. The results showed significant increasing as well as decreasing trends in the annual and monthly ET_0 . However, ET_0 trends were increasing. In the monthly scale, the number of the increasing trends was more than the number of decreasing trends, in the majority of warm months of the year.

Keywords : climate change, Mann-Kendall, Penman-Monteith method (FAO-56 PM), reference crop evapotranspiration

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