Statistical Characteristics of Precipitation Data in Arid and Semi-arid Regions of Khorasan Razavi Province, Iran

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Precipitation is one of the most important meteorological phenomenons, regarding to climatic condition and climate classification. The amount of precipitation is one of the most variable meteorological data. The variation of the amount of precipitation in arid and semi-arid regions is higher than humid one. consequently, the prediction of precipitation in time and/or in space is very difficult and uncertain in these regions. However, the precipitation that does occur in these regions is the most important aspect of the available water resources. Therefore, understanding the characterizing of the spatial and temporal variability of precipitation is critical. In this research, to investigate the effects of climate and its space inconsistency, on the statistical characteristics of precipitation data, the precipitation data form Khorasan Razavi province (Iran) was investigated. This province is located at longitude of 56˚ 40ı to 61˚ 15ı E and latitude of 33˚ 30ı to 37˚ 30ı. According to De Martonne climate classification, the areas of this province are located in arid or semi-arid climate. While, according to Emberger climate classification, most of areas of this province are located in cold-dry climate. The monthly and 24 hour maximum precipitation data for all climatological stations of the province were obtained. After some statistical tests such as: homogeneity test, outlier test, trend and . . . , the precipitation data of 10 stations for a common of 30 years duration were selected. After that, 20 statistical characteristics of monthly, seasonal and yearly precipitation data for every station were determined. Some of these characteristics are such as: mean, standard deviation, coefficient of variation, skewness, kurtosis, k-th percentile of values, relative of maximum to mean, relative of maximum to minimum and . . . . Finally the effects of space climate variability, on statistical characteristic of precipitation were determined.

Keywords: Precipitation, Statistical Characteristics, climate, semi-arid, Khorasan Razavi.