

Temporal And Spatial Analysis Of Heavy And Superheavy Precipitations In The Southern Coastal Of Caspian Sea

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In this research, along with grouping of Precipitation events for 46 synoptic, climatology and rain gauge stations from 1336 to 1383 on the basis of 3 variables of duration, amount and intensity of precipitation events using principal component analysis (PCA) and clustering analysis (CA), temporal and spatial analysis of heavy and superheavy precipitations did and its frequency and trend were analysed. The results showed that mehr month and autumn season have the most frequency of events in each of two groups. However, winter season in the heavy group and summer season in the superheavy group are the next priority. The obtained results of studying of heavy and superheavy precipitation groups showed that the southern coastal Caspian sea are divided to 5 regions on the basis of frequency events and are classified to 6 groups on the basis of duration, amount and intensity of events. As, the heavy precipitation group in the western area have mean maximum and variance maximum of duration of events, mean maximum, variance maximum and skewness maximum of amount of events, skewness maximum and kurtosis maximum of intensity of events. On the other hand, in the superheavy precipitation groups, except of small parts of area, there is probability of event in all of months. Also, in all of months, there is at least one region that it haven't superheavy precipitation. Analysis of annual trend curves showed that all of statistical indices of duration of events have decreasing trend and all of statistical indices of amount and intensity, except of minimum index have increasing trend. Amount minimum of heavy and superheavy precipitation with maximum R² have decreasing trend significantly.