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ANALYSIS OF DEPTH-AREA-DURATION CURVES OF RAINFALL IN SEMIARID AND ARID REGIONS USING GEOSTATISTICAL METHODS: SIRJAN KAFEH NAMAK WATERSHED, IRAN

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ABSTRACT
Isohyet maps are were prepared after collection of data and information at 59 rainfall gauging stations in the Sirjan Kafeh Namak Watershed, Iran, and the dominant and maximum rainfall for durations of one to three days were selected. The relationship between rainfall and the elevation was investigated, but due to the insignificant difference in the relationship, two methods of geostatistical kriging and inverse distance with powers of 1 to 3 were evaluated to draw the isohyet maps and determine the average rainfall. To evaluate the methods, mean absolute error was used. The results show that the kriging method is better than the inverse distance method for determination of average rainfall. Using the kriging method, the isohyet maps of one to three day duration and depth-area-duration curves were drawn. Conversion of point rainfall to average rainfall for an area of up to 20000 km^2 of the area under study is possible. Also, the curves show that the ratio of the amount of rainfall at the center to the amount of rainfall at an area of 20000 km^2 is 1.98, 1.74 and 1.48 for durations of 1, 2 and 3 days respectively.

Reference: *Abkar, A., M. Habibnejad, K. Solaimani, M. Baniasadi, and M.Z. Ahmadi. 2006. Analysis of Depth-Area-Duration Curves of Rainfall in Semiarid and Arid Regions Using Geostatistical Methods: Sirjan Kafeh Namak Watershed, Iran, Journal of Environmental Hydrology, Vol. 14, Paper 2.*

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