

PROBABILITY DISTRIBUTION OF FARIA CATCHMENT RAINFALL DATA

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Abstract

Analysis of rainfall data is one of the important tools to understand the climatic conditions of any region.

Extreme events, such as severe storms, floods, and droughts are the main features of the hydrological system of a region that need to be analyzed. Faria catchment dominating the eastern slopes of the West Bank is a catchment of about 330 km² attains the semiarid characteristics of the region. The catchment is gauged by 6 rainfall stations that record daily rainfalls.

Frequency analysis is applied here to analyze the recorded rainfall. The statistical distribution of these data are presented and evaluated. Gumbel distribution is applied to simulate the annual rainfall data of the 6 station of Faria catchment. Trend and regression analysis have been also applied.

The results have provided means to understand and evaluate the distribution characteristics of the rainfall in semiarid regions. An increasing trend of rainfall averages is obtained for the elevated stations and a decreasing trend for the lower stations. The trend is related to the later developments and changes in the climatic conditions of the region. Regression analysis relates the 6 stations within the Faria catchment.

Keywords: Extreme Event; Frequency Analysis; Gumbel Distribution, semiarid regions.

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