

Suitable probability distribution model for rain fall data:-A case study

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Abstract

The rainfall data of six different locations (Srinagar, Pahalgam, Kokernag, Qazigund, Gulmarg and Kupwara) of Kashmir valley were analysed to identify the suitable fit distribution out of eleven well known distributions. Three statistical goodness of fit tests (Anderson Darling, Kolmogrov–Smirnov, and Chi-Square) were carried out in order to select the best fit probability distribution on the basis of highest rank with minimum value of test statistics. The best fit probability distribution was identified based on the minimum deviation between actual and estimated values. Lognormal and Pearson(5P) yielded good for Srinagar, General Extreme value for Pahalgam, General Extreme and Pearson(5P) for Qazigund and Lognormal for Gulmarg and Kupwara. These suitable fit probability distribution for different locations were found to be different. However for Kashmir Province Lognormal yielded best fit as per three test statistics the values obtained were Anderson Darling (1.104), Kolmogrov–Smirnov(1.100), and Chi-Square(1.010).

Key words: Probability distributions, rainfall, goodness of fit tests

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