

Principle Component Approach for Clustering the Rainfall Pattern in Visakhapatnam District

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ABSTRACT

A multivariate approach based on principle component analysis has been proposed to study the rainfall based classification of different mandals of Visakhapatnam district of Andhra Pradesh. The approach was applied to study the rainfall patterns of 42 mandals based on 25 years of rainfall data of Visakhapatnam district from 1986-2010. The district exhibits variability in monthly and mandal wise rainfall and the first six principle components explains 74.22 per cent of rainfall variability which are statistically significant. The application of this approach identified medium rainfall (862 mm-1162 mm) was the most frequent representative pattern of rainfall in all mandals of Visakhapatnam district. The analysis based on multivariate approach like principle component analysis provides useful information about the rainfall patterns that are likely to occur in different regions in different periods.

Key words : Coefficient of variation, Common principle components, Principle component analysis, Rainfall.