

Abstract:

In order to investigate temporal fluctuations in the seasonal rainfall over East Africa, monthly rainfall records from about 100 stations during the period 1931 -75 were subjected to harmonic analysis on the yearly basis. Under this method time series were generated from the yearly amplitude and phase angle values of the dominant harmonics for the period 1931 -75.

The temporal fluctuations of the generated time series were used to describe temporal patterns of seasonal rainfall in East Africa during the period of study. Yearly fluctuations in the pentad rainfall were also investigated during the wet seasons. The results from harmonic analysis indicated the dominance of the first three harmonics over most regions of East Africa. Higher harmonics, however, explained substantial variance in some dry regions. The statistical methods employed indicated that at 95% confidence level, no significant seasonal changes or shifts could be detected in the seasonal rainfall patterns. Spectral analysis, however, displayed short period fluctuations within the ranges of 2 - 3 years and 5 - 6 years. A weak 10 - 11 years peak also appeared in some series.