

**FITTING OPTIMAL ORDER FOR AVERAGE MONTHLY RAINFALL
OCCURRENCE IN NIGERIA**

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ABSTRACT

Rainfall data for three geographical zones in Nigeria were collected from the Federal Ministry of Aviation, the Meteorological Department at oke imosan, Abeokuta, Ogun state for the period of 2001-2010 and investigated in order to fit a model for the monthly rainfall occurrence data.

The study adopted the Box and Jenkins approach of model identification, parameter estimation and diagnostic checking.

The result of the study revealed that the models

$$W_t = a_t - 0.39a_{t-1} \text{ and } W_t = 0.08W_{t-1} + a_t$$

were sufficient to analyze the rainfall occurrence for Enugu and Ogun states respectively.

The optimal order of these models were evaluated for model adequacy by the examination of the residual auto-correlation and the overall test of model adequacy using the statistical package, S-Plus and they were found adequate.