

**TIME SERIES ANALYSIS OF TEMPERATURE DATA
IN OGUN STATE**

[ABEOKUTA AS A CASE STUDY]

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ABSTRACT

This project work is based on time series analysis of monthly temperature data in Abeokuta. The observations covered a period of ten years. Secondary data was used in the analysis and R package 2.11.1 was used to analyze the data.

The objectives of the study is identifying the model used for temperature data, to find the parameter estimates and checking the adequacy of the model.

Box and Jenkins model was introduced in the study. More so, time plot was plotted and model was tentatively identified with the use of autocorrelation and partial autocorrelation function. Correlogram was plotted and it exhibited a stationary series after the first difference. Over fitting was performed where different models were fitted for these data before ARIMA (1,1,1) which has the smallest AIC of 527.19 was chosen to be the best fit and the model equation was given as $\hat{Y}_t = 0.5794Y_{t-1} - 0.9078\hat{\epsilon}_{t-1}$. They were identified with the aid of R package of version 2.11.1