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On homogeneity and use of SSTs for seasonal forecasting in the coastal areas of Nigeria

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It is essential that rainfall data are quality controlled for reliable prediction. Prediction models have indicated that seasonal fluctuations in global parameters like El Nino, SOI indices, SST anomalies and other parameters influence seasonal rainfall (Ward, 2000; Ogallo, 1994 and Cadet, 1985 etc.).

In this work, anomalies of SSTs over North Atlantic, South Atlantic and Nino 3 regions and Southern Oscillation indices (SOI) are correlated with the monthly and seasonal anomalies of rainfall in the six coastal stations of Nigeria. The rainfall data are from 1910 –2002. Visual inspection of graphs of the monthly and seasonal anomalies of rainfall is carried out before double mass curve analysis is used for quality control of the rainfall data.

Results showed that:

1. Out of the six coastal stations used, Ikeja, Warri and Port Harcourt displayed non-homogeneity in their mass curve graphs. This is mainly due to urbanization and heavy industrialization near the stations.

2. Most of the stations showed significant correlations with the global SST anomalies and SOI. Of great interest is January/February SST, which can be used to predict the onset of rainfall at the stations.