

IAF EARTH OBSERVATION SYMPOSIUM (B1)  
Interactive Presentations - IAF EARTH OBSERVATION SYMPOSIUM (IPB)

Author: Mr. Andy Wolloh Mesue Ngoumbah  
Cameroon, andngoumbah@yahoo.com

LINEAR REGRESSION STATISTICS IN RELATION TO VEGETATION AND  
RAINFALL/TEMPERATURE.

**Abstract**

Harmful anthropogenic activities such as fossil fuel burning, deforestation etc., has resulted in the increase of greenhouse gases in the atmosphere thereby leading to climate change. Climate change is having an adverse effect on the ecosystem mostly within the developing nations. In this research, the efficacy and efficiency of Remote Sensing, Geographic Information System and statistical analysis was employed in order to determine the vegetation changes within the forest-savannah transition zone of Nigeria from 1973 to 2015, analyse the trend of atmospheric variables from 1960 to 2015 and model vegetation sensitivity to climate change and elevation throughout the study period. The parameters used in the study were; Normalised Difference Vegetation Index (NDVI), Temperature, Rainfall, Carbon dioxide and elevation. The result of the NDVI analysis showed a general decrease in vegetation within the forest-savannah transition zones. The trend analysis computed for the atmospheric variables showed a downward trend in rainfall and an upward trend in temperature and carbon dioxide within the study area. The vegetation sensitivity modelling was computed using the linear regression statistical analysis. The results showed that vegetation tends to respond negatively to rainfall and temperature more than carbon dioxide. In addition, altitudinal effect on vegetation sensitivity was evaluated in response to the prevailing atmospheric variables. The result revealed an unsystematic effect of elevation on the vegetation.