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Rain Days and Their Predictability in South-western Region of Nigeria

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ABSTRACT This study was able to determine the rainy days of the first two months in the rainy season and the last two months to the end of rainy season including their annual totals in South-western Nigeria. To be able generate models for their prediction, the study used composite effect of the rainfall – engendering factor of the sea surface temperature of the tropical Atlantic Ocean, Land-sea thermal contrast between Southwestern Nigeria and the tropical Atlantic Ocean, surface location of Inter-tropical Discontinuity and the land surface temperature in Southwestern Nigeria. The specific locations over which rainfall data were collected to represent Southwestern Nigeria include Ikeja, Benin City, Ibadan and Ilorin. Stepwise multiple regression analysis was used to construct the model. The analysis shows that the hypothesized rain-engendering factors are adequate in predicting rainy days in Southwestern Nigeria. Out of the four rainfall engendering factors, two of them (sea surface temperature and land-sea thermal contrast) dominate the explanatory factors in the model, constituting 87% of total explanatory factors found significant in the models generated. The study also show that all of the areas of the tropical Atlantic, right from the Gulf of Guinea, through the St. Helena and Ascension Island, up to the Benguela current region have significant bearing to the inter-annual variability in the rainy days in Southwestern Nigeria. It was also noted that the direction of relationship between sea surface temperature, land-sea thermal contrast and rainy days in Southwestern Nigeria is not simple and straightforward, but the sea surface temperature anomalies experience changes in location, extent and time of the year.