

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Effect of Seasonal Variation of Anomalous Condition on Radio Propagation in Nigeria ISRAEL EMMANUEL, BABATUNDE ADEYEMI, EMMANUEL OGOLO, ADEKUNLE ADEDIJI, Federal University of Technology Akure Nigeria — Daily variation of effective earth radius factor and seasonal variation of refractivity gradients from surface to around 1000 m above ground level in the tropospheric layer are presented based on observation from the meteorological data obtain from ECMWF database. Thirty four years (1979 -2014) of data from surface and profile of Era Interim of the temperature and relative humidity are used to determine the surface anomalous propagation over some selected location I Nigeria. Estimation of anomalous propagation are observed for onset and peak of rainy and dry seasons. The occurrence of anomalous strongly depends on the local time and synoptic weather conditions which have an appreciable on the refractivity vertical profile, especially the seasonal north – south movement of inter tropical Convergence Zone (ITCD) which provide wet and dry seasonal variations of anomalous were also determined. Spatial distribution of refractivity gradient for both wet and dry seasons are also obtained. The highest occurrence of duct were noticed in the night and morning (00:00 UTC and 06:00UTC) across the country though it was low in the northern part of the country, while low or no occurrence of duct were observed in the afternoon and evening (12:00 UTC and 18:00 UTC). Also percentage occurrence of duct were also high and low during the wet and dry seasons respectively.

Israel Emmanuel
Federal University of Technology Akure Nigeria

Date submitted: 06 Nov 2015

Electronic form version 1.4