

ABSTRACT

The equatorial ionosphere is one of the most important regions of the ionosphere. It is characterized by ionization anomaly (EIA) which is a unique structure with two crests of ionization at about ± 17 dip latitude on each side of the magnetic equator and a trough in between. The data from three equatorial stations namely; Ilorin, Nigeria 8.5°N, 4.5°E; Fortaleza, Brazil 3°S, 38°W; and Jicamarca, Peru 12°S, 76.8°W were used for this study. Hourly data obtained from a Digisonde Portable Sounder (DPS-4) located at Ilorin in the form of Standard Archive Output (SAO) files for the year 2010, a year of low solar activity were used. The corresponding data used in the analysis for Fortaleza and Jicamarca were obtained online from the Centre for Atmospheric Research, University of Massachusetts, Lowell, United States of America. In this study, we have been able confirmed the diurnal, seasonal and latitudinal variability of the equatorial spread F. Generally, the three types of spread F were well represented in all the three stations and their occurrence were observed towards the sunset and sunrise periods.

Key words: Ionosphere, Quiet days, Equatorial Spread F