
NASA/ADS

travelling ionospheric disturbances detected by riometers in the sub-polar and the south atlantic magnetic anomaly regions

Show affiliations

Brum, C. G. M.; Abdu, M. A.; Batista, I. S.; Santos, P. M. T.; Barros, L. P.

Gravity waves propagating to thermospheric heights and interacting with the ionospheric plasma give rise to Travelling Ionospheric Disturbances (TIDs). These are visible as amplitude, phase and frequency quasi-periodical fluctuations of a radio signal reflected from the ionosphere and a variation of cosmic noise absorption intensity in the lower ionosphere, which can be registered by a riometer . The knowledge of the intensity of the wave disturbances of the neutral atmosphere and of ionospheric parameters and their forecast are important to many applications, like forecasting conditions of radio communication, aero- and spacecraft navigation and/or the development of forecasting numerical models of the general circulation and composition of the middle atmosphere and ionosphere. In this work, the previous analysis of occurrence of TIDs detected by riometers operating at 30 MHz over Cachoeira Paulista (connected to an antenna pointed to the zenith direction, 22.50 °S; 45.00°W) and the Brazilian Antarctic Station - EACF (connected to an antenna pointed to the zenith and geomagnetic west directions, 62.56°S; 58.39°W) during almost one complete solar cycle (1989-1996) is presented. Its causes as well as possible sources will be also discussed. Keywords: Travelling Ionospheric Disturbances, cosmic noise absorption, lower ionosphere, riometer

Publication:

35th COSPAR Scientific Assembly. Held 18 - 25 July 2004, in Paris, France., p.3593

Pub Date:

2004

Bibcode:

2004cosp...35.3593B

