



## Season-longitude variability of low altitude electrostatic turbulence observed at low invariant latitudes

**F. Lefèuvre (1), F. Li (1), M. Parrot (1)**

(1) LPCE - CNRS - Univ ORLEANS (F), Contact [lefeuvre@cnrs-orleans.fr](mailto:lefeuvre@cnrs-orleans.fr)

Power spectra of the ELF electric field measured on-board DEMETER are used to study the low altitude electrostatic turbulence observed at low-to- mid latitude. Survey mode power spectra, selected for statistical analysis, have a power law in  $f^{-\alpha}$ , with  $\alpha$  spectral index, below  $\sim 160$  Hz. The frequency and time resolutions are respectively  $\sim 19.5$  Hz and 51 ms. Averaged spectral indexes are estimated in geographical bins of  $2^\circ$  in latitude and  $5^\circ$  in longitudes. Monthly maps of DEMETER night time passes ( $\sim 22$ h) point out a value greater than 2 during winter periods and at longitudes between  $-130^\circ$  and  $-50^\circ$ . Averages made over one year between  $-20^\circ$  and  $+20^\circ$  invariant latitudes show season-longitude variability of the spectral indexes similar to the season-longitude variability of equatorial bubble occurrence (Burke et al., Annales Geophys., 22, 3089, 2004; J. Geophys. Res., 109, A12301, doi:10.1029/2004JA010583, 2004). This suggests that, during winter time, a strong electrostatic turbulence is associated with plasma density irregularities which develop just after sunset in the equatorial regions.