



Long term changes in the plasmaspheric density through measurements of the ULF resonance frequency at low latitude

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ULF field line resonance (FLR) frequencies at low latitude ($L = 1.61, 1.71$, and 1.83) have been monitored during several years using a cross-phase analysis of geomagnetic field measurements recorded at the South European Geomagnetic Array (SEGMA). Variations of FLR frequencies at low latitude reflect variations of the mass density of the plasmasphere in which the field lines are embedded. Such variations can be important in modulating the energetic particle precipitation rate and the consequent process of energy dissipation in the inner magnetosphere. The results of the analysis, performed on the basis of daily averages, shows frequency changes which appear to correspond to the long term variations of the solar radiation flux; in addition, they well follow the geomagnetic condition changes supporting the importance of the effect of interplanetary perturbations in the plasmasphere-ionosphere system.