

REMOTE SENSING OF THE PLASMASPHERE MASS DENSITY BY GEOMAGNETIC FIELD LINE RESONANCES DETECTED AT SEGMA ARRAY DURING THE LAST SOLAR CYCLE

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Geomagnetic field line resonances have been recorded by the South European GeoMagnetic Array (SEGMA, $1.56 < L < 1.89$) since 2001. These observations constitute a significant data base for investigating different dynamical processes which take place between the ionosphere and the inner plasmasphere. Diurnal, annual, solar irradiance and geomagnetic activity dependences of the plasmasphere mass density as well as some interesting case studies are presented. Ionospheric conditions are examined using measurements from approximately conjugated ionosonde stations in Italy and South Africa. Experimental results are also compared with those provided by a physical–numerical model of the ionosphere–plasmasphere system.

geomagnetic field line resonance, plasmasphere

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