

Space Studies of the Upper Atmospheres of the Earth and Planets including Reference Atmospheres (C)

Recent Advances in Equatorial, Low- and Mid-Latitude Mesosphere, Thermosphere and Ionosphere Studies (C1.1)

CORRELATION BETWEEN THE COSMIC NOISE ABSORPTION CALCULATED FROM SARINET DATA AND THE ENERGETIC PARTICLES MEASURED BY MEPED: SIMULTANEOUS OBSERVATIONS OVER SAMA REGION

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The cosmic noise absorption (CNA) studies are presented in terms of the CNA images obtained from the imaging riometers operated at the Southern Space Observatory, in Sao Martinho da Serra (29.4° S, 53.1° W), Brazil, Concepcion (36.5° S, 73.0° W) and Punta Arenas (53.0° S, 70.5° W) in Chile, which form part of the South American Riometer Network (SARINET) and are located at the central and periphery regions of the South American Magnetic Anomaly (SAMA). Correlations are made between the maximum CNA observed at the SARINET stations and the two channels of energetic electrons (>30 keV and >300 keV) and the three channels of energetic protons (80-240 keV, 800-2500 keV and >6900 keV) from Medium Energy Proton and Electron Detector (MEPED), measured during the moderate geomagnetic storm that occurred on September 3, 2008. The results show high correlations between the CNA detected at SSO and

the flux of protons with energy between 80 and 240 keV, and the flux of electrons with energies higher than 300 keV, while an additional ionization at CON was correlated with electrons of energies higher than 30 keV. The CNA detected at PAC was probably caused by the increase of the flux of protons with energy between 80 and 240 keV.