

INFLUENCE OF GEOMAGNETIC SUBSTORM ON COSMIC NOISE ABSORPTION AND ATMOSPHERIC ELECTRICITY AT A SUB-AURORAL LOCATION

Anand K. Singh, B. M. PATHAN, and A. K. Sinha

Indian Institute of Geomagnetism, Navi Mumbai, INDIA

Simultaneous study of ground based magnetic field data and atmospheric electricity data from Indian Antarctic station Maitri ($70^{\circ} 45' \text{ S}$, $11^{\circ} 44' \text{ E}$) and the cosmic radio noise absorption data from neighboring Russian Antarctic station NOVO ($70^{\circ} 49' \text{ S}$, $11^{\circ} 38' \text{ E}$) has been carried out. It is found that the geomagnetic pulsations Pi2 and Pi3 go hand in hand during substorms even though they have different generation mechanism. The longer period oscillations (Pi3) are also observed simultaneous in cosmic radio noise absorption (sampled at 1 minute) suggesting that the auroral electron flow influences the ground based pulsation field. The study also reveals that the fair weather atmospheric electricity is influenced during substorms. We found that the atmospheric electricity parameters, potential gradient and Maxwell current are slightly enhanced and more fluctuating on an average during the substorm than geomagnetically quiet time.

Atmospheric electricity, Cosmic noise absorption, Maxwell Current

PATHAN, B.M., Professor-E, Indian Institute of Geomagnetism, Navi Mumbai, INDIA.
Phone: +91-22-27484056, FAX: +91-22-27480762, Email: bmpathan@iigs.iigm.res.in