621

GEOMAGNETIC STUDIES AT INDIAN ANTARCTIC STATION, MAITRI

B.M. Pathan, A. Dhar, A. Hanchinal, R. Selvamurugan

Indian Institute of Geomagnetism, Navi Mumbai, India

India started its scientific expedition to East Antarctica in the early eighties and since then geomagnetic measurements are carried out on a regular basis. The magnetic field of the Earth is affected by the dynamic conditions in the near-Earth environment of the ionosphere and magnetosphere. The Indian Antarctic station, Maitri ((70^{o}45' S, 11^{o}45'E, geographic; 66^{o}S, 53^{o}21E, geomagnetic) is a sub-auroral station. Also, this station is situated in the region where maximum decline in geomagnetic field is observed. Thus the measurements at this station are providing valuable inputs in monitoring solar wind-magnetosphere- ionosphere interaction and energy transfer as well as understanding the secular variation in the main magnetic field. Initially, the measurements were made using proton precession magnetometer (PPM) in campaign modes. Subsequently the geomagnetic variations are monitored continuously using digital fluxgate magnetometer and PPM while 30 MHz riometer isoperated to know ionsopheric absorption conditions. Measurements at Maitri are supplemented by another fluxgate magnetometer operated at about 100 km distance from Maitri to study the dynamics of auroral current system.

Maitri being a sub auroral station records the variations of that of southern limb of global Sq current system during magnetic quiet conditions. It comes under the influence of auroral electrojet with increasing magnetic activity. The auroral current systems is found to drift eastward at a velocity of about 2-3 km/s during moderately disturbed conditions. It is also seen that the magnetic field at this location is decreasing at a rate of ~110 nT/year in the last century.