

Metadata Details

Title

Studies of High Latitude D-Region Using VLF Observations.

Science Keywords

| | |
|-----------------|--------------|
| Category | Solid Earth |
| Topic | Geomagnetism |
| Expedition Year | 1982-1983 |
| ISO Topic | Geodesy |

Summary

Abstract

Measurements of phase variation of 12.9 kHz signals from OMEGA, Argentina (43°S 65.2°W) were made at the Indian Antarctic Base Camp (70°S, 11°E) during the 1st Indian Antarctica Expedition. The path was 5060 km long and traversed mainly mid-high latitudes. The length of the path was enough for only the 1st order mode $n = 1$ (Wait and Spies, 1964) to be predominant during daytime. The phase recording was made with TRACOR 599K VLF receiver and 1 m² loop antenna, the reference being Rubidium frequency standard. The period of measurement was 17.1.1983 to 16.2.1983.

Purpose

In our previous study during the 1st Indian Antarctic Expedition it was concluded (Sen Gupta, 1983) that the solar zenith angle control of the D-region ionisation during daytime is identical at low and high latitudes. This conclusion was based on VLF phase variation data obtained from a trans-equatorial path Goa-Re Union and a high latitude path Antarctic base-Omega Argentina, during the 1st Indian Expedition. In the present work the above conclusion has been reconfirmed using the data obtained over the Antarctic base-Argentina path.

Data Center