

BEHAVIOUR OF THE QUIET DAY GEOMAGNETIC VARIATION AT LIVINGSTON ISLAND AND VARIABILITY OF THE SQ FOCUS POSITION IN THE SOUTH AMERICAN-ANTARCTIC PENINSULA REGION

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The characteristics of the regular daily variation at the relatively new geomagnetic observatory of Livingston Island (Antarctica) have been studied. They include the seasonal and solar cycle variabilities. Studies of the solar cycle variability have been carried out thanks to the fact that there are presently more than eleven years of definitive data already available. The seasonal behaviour of the quiet-time daily field variations are those expected from earlier studies for a mid-latitude observatory placed at the south of the southern hemisphere current focus. There is also a clear dependence of the Sq amplitude on solar activity, although the linearity is not uniform and both signals appear to be out of phase. A contemporaneous analysis for solar cycle 23 has been carried out for observatories located in the same longitudinal sector, with the aim of identifying the latitudinal displacements of the current focus that originate the observed Sq variations. This was also determined for solar cycle 20 from a different set of observatories. The uncertainties associated with the method employed for determining the focus positions are due to the scarcity of observatory data in the South American-Antarctic Peninsula region, but it can still be asserted with a certain reliability that focus latitudes are higher during summer and at equinoxes than in winter. On the other hand, it is difficult to establish a correlation between focus latitudes and solar Sunspot Numbers.

Sq , geomagnetic observatories, ionospheric currents

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