



Geomagnetic Activity in High Latitudes During Last 100 Years : Seasonal and Latitudinal Variation

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Geomagnetic activity in auroral oval latitudes between 60 and 70 geogr.lat. has been examined based on ground magnetic field measurements. We have analyzed the variability of the north-south magnetic field component and its time derivative since 1914 i.e. for over last 100 years. The main purpose of the study was to examine the seasonal variability of the geomagnetic activity and study how well the single magnetometer station can be used for the seasonal pattern analysis. We compared the seasonal trends found based on data from Nurmijärvi, Sodankylä, Abisko and Tromso to the seasonal trends of AL westward electrojet index. We found out that roughly one fourth to one third of the years show the largest geomagnetic activity in spring and fall. For the rest of the years the seasonal activity maxima or secondary maxima was found in either of the solstice. We also found the latitudinal differences in a seasonal variability as well as cycle-to-cycle differences indicating the role of the solar wind and the Sun as a source of the variability.