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Long trend of Sq field and its seasonal variation

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The time variation of the amplitude of geomagnetic Sq field was examined for each month in a long period of more than 50 years at a few observatories. It was found that the amplitude is strongly controlled by the solar activity, and the difference between solar cycles including their fine structures reflected in the Sq amplitude. Although most of the effect of solar activity on the amplitude can be explained by the variation of the ionospheric conductivity, the seasonal variation of the amplitude in response to the solar activity cannot be simply explained by the conductivity effect,.

In the presentation, these results will be discussed with those of the spherical harmonics analysis and the ionospheric conductivity estimation.

Keywords: geomagnetism, daily variation, long trend, seasonal variation, solar activity, ionospheric conductivity