

The effect of the geomagnetic activity on the geomagnetic measurement's accuracy

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Abstract: The geomagnetic field changes with time and space. For the study of this changes it is necessary to determine the distribution of the geomagnetic field from geomagnetic surveys. The question is, at which geomagnetic activity it is possible to carry out these measurements not to have rank error. The differences in the total field F between 8 observatories in Europe for 6 months using 1- minute INTERMAGNET-files were analysed. For the observatories BDV and HRB the total field was calculated from the east, north and vertical components of the geomagnetic field.

It was obtained that the differences increased when the geomagnetic activity was stronger and limitations for the geomagnetic activity were estimated. The achieved results indicated, that the field measurements at the stronger activity ($Kp > 4$) should not be performed, because the error (after the reduction to the epoch) is much greater compared to a commonly acceptable error for field measurements.

Key words: geomagnetic survey, geomagnetic activity, Kp -index

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