

Accuracy of geomagnetic field distribution maps – the geomagnetic ground survey of Slovakia for the 2007.5 epoch as an example

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Abstract: The determination of the spatial distribution of the geomagnetic field (GMF) elements is of great importance for scientific purposes as well as in practice. Some information about accuracy of the geomagnetic maps needs to be known for practical use and also if the maps are used as input information of following research studies. The up to now papers usually contain comments about the precision of the instruments, which were employed for the measurements of the GMF. However, such information likely does not answer the question about the quality of the geomagnetic maps. It is because our experience shows that spatial variations of the field within several surrounding kilometers often exceed the precision of measuring instruments. In the paper, we proposed a simple method for accuracy evaluation of GMF elements' distribution maps. It was applied to the maps which has been the results of the magnetic ground survey carried out in Slovakia in the 2007.5 epoch. The method is applicable to the results both of the ground surveys as well as repeat station surveys. It is based on a simple procedure which is repeated for each observation point of the net. One simple point drops out of the net of the observation points, then the map is created in a standard way,

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and finally the value of the dropped out observation point is compared with the value determined from the map.

Key words: geomagnetic measurements, magnetic maps, geomagnetic survey

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