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## **The relative secular variations of the geomagnetic field along the Zgorzelec-Wizajny profile in the period of 50 years**

### **Abstract**

The paper summarizes 50 years of research on geomagnetic relative secular variations along a 700 km profile Zgorzelec-Wizajny (Z-W). The profile cuts a zone of Variscan folds in the Paleozoic Platform (PP), the Trans-European Suture Zone (TESZ) with the Teisseyre-Tornquist Zone (TTZ) and the Polish part of the East European Craton (EEC). The values of the total magnetic intensity  $\vec{T}$  of the geomagnetic field were made at 31 measurement sites and reduced to the base recordings at the Belsk Geophysical Observatory. The study of the secular variations along profile during the fifty years (1966 -2016) showed the changeable dynamics of the relative secular variations and that the growth of the geomagnetic field (reduced to the Belsk's recordings) at the East European Craton was slower than in TESZ and PP.

The relative secular variations are presented in two periods of time, when the dynamics and character of changes were extremely different. In the first period of time (1966-2000) the values of the variations (with increasing amplitude) were much differentiated. In the second time period (2000-2016) very small relative variations with strongly decreasing amplitude were observed. The reason of this phenomenon is unknown but it should be noticed that also in the year 2000 the direction of the geomagnetic relative variations gradient was turned away in the Polish territory.

Secular variations of the geomagnetic field along Zgorzelec-Wizajny profile were compared with the plots of total magnetic intensity anomalies ( $\Delta T$ ), terrestrial heat flow as well as with the seismic model of the lithosphere in the Trans-European Suture zone along the profile P4 (POLONAISE'97) adjacent to the magnetic profile Z-W.