

RECOGNITION OF CRUSTAL STRUCTURES OF MID-POLISH THROUGH BASED ON REGIONAL MAGNETOTELLURIC PROFILES

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The magnetotelluric survey at three long regional profiles crossing the Mid-Polish Trough in central and north-western part of Poland was made. Two of the profiles pass across the Pomeranian section of the Trough and the third one cuts its Kujawy section. The task of the survey was to recognize the geological structure of the contact zone of Precambrian East European Craton and Paleozoic Platform of Western Europe. Magnetotelluric measurements were taken with the use of MT-1 system of Electromagnetic Instruments Incorporation (EMI), Richmond, California, USA and System 2000.net based on V8 receiver of Phoenix Geophysics Ltd., Ottawa, Canada. Processing of the recorded data was made with use of robust procedures.

Geophysical interpretation of MT sounding data along profiles was based on 1D and 2D inversion. Starting models for 1D inversion were constructed based on results of electromagnetic well-logging data. Geological interpretation was made based on resistivity cross-sections and borehole data. As a result of magnetotelluric data interpretation, a tectonic model along measurement profiles with fault zones was constructed and lithology differentiation of sub-Zechstein complex was determined.

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