

The interpretation of new geophysical measurements in the area of northern Slovakia

V. Szalaiová, P. Zahorec, V. Stanková
Geocomplex, a.s.¹

M. Katona, M. Bielik
Department of Applied and Environmental Geophysics, Faculty of Natural Sciences Comenius University²

J. Šefara
Geophysical Institute of the Slovak Academy of Sciences³

Abstract: During the last four years some new geophysical results were obtained within the frame of the international project “Structural – geological conditions of Western Carpathians in border areas of northern Slovakia and their interpretation by means of geophysical measurements”. The project was funded and supported by the Ministry of Environment of the Slovak Republic. The aim of this project was the interpretation of deep and subsurface geological structures in the territory of northern Slovakia along detailed measured transects.

The following geophysical measurements were performed: gravimetry, magnetometry and vertical electrical sounding (AB = 4000 m).

The main task of gravity processing was unification of all gravity data (from the territory of Slovakia and Poland). The quantitative interpretation along six gravity profiles has been realized using GM.sys software, too.

The interpretation of geoelectric data consisted of reinterpretation of older geoelectric measurements and new measurements realized in the frame of this project. The results from this interpretation helped us to define structural-tectonic and lithological units to depth of about 1 km.

Geomagnetic measurements were realized by means of PM-2 proton magnetometer along measured gravity profiles.

For reinterpretation of deep geological structures a new reprocessing of deep reflex

¹ Geologická 21, 821 06 Bratislava 214, Slovak Republic; e-mail: gravity@geocomplex.sk; geokombb@stonline.sk

² Comenius University, Mlynská dolina, 842 15 Bratislava, Slovak Republic
e-mail: katona@fns.uniba.sk

³ Dúbravská 9, 842 28 Bratislava, Slovak Republic, e-mail: geofsefa@savba.sk

seismic profiles (2T/83, 84; 2AT/84; 512/86 1T/80 a 513/87) has been done (12 sec.). These profiles have been used to define the most important tectonic boundary-lines and to creation of final geological - geophysical cross-section.

Key words: Western Carpathians, gravity, geophysical measurements, geological-geophysical interpretation