

Geophysical results of project „Neotectonic activity of West Carpathians area“ solving

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Abstract: This work presents some results of using geophysical measurement for solving APVV project „Neotectonic activity of West Carpathians area“. The measurements were done in different parts of Slovakia: in west near Dobrá Voda village, in area of Upper Nitra and near Martin town, in Middle Slovakia in Volovské vrchy mountain, at part of Muran fault between Tisovec town and Predná hora pass, at eastern part of Muran fault in Levočské vrchy mountains and at Vikartovský chrbát in east Slovakia.

At these localities were used several geophysical methods: vertical electric sounding (VES), electrical resistivity tomography (ERT), very low frequency method (VLF), spontaneous polarization (SP), pulse electromagnetic emission (PEE), magnetics and emanometry. Measurements were done at every locality on profile/profiles and results were transformed to vertical cross sections of rock environment. All localities are characterized by several geophysical outcomes from which can be derived needed geological information e.g. limitation of geological bodies, its material and lithology characteristics, determining of faults and tectonic zones etc.

In Dobrá Voda locality was showed detailed geological structure of one part of seismoactive structure. In Upper Nitra area was described graben character of Malomagurský fault. In locality near Martin town was specified character of tectonic contact between crystalline and sedimentary rocks. In several localities was specified geodetic stability of stone outcrop with geodetic points. In several localities at Muráň fault was described detail rock structure in fault zone and position of different rock environment. In Muráň fault part in Levočské vrchy mountain was search fault line below/in flysch sediments. In Vikartovský chrbát mountain was specified geologic situation at fault structure.

Besides given information were tested several methodic concepts for interpretation results of ERT method measurement and for geologic interpretation of data combined from different geophysical measurements.

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