

Vertical electrical sounding in the marginal part of the Central Slovakian Neovolcanites.

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The aim of this paper is to present a about the successful application of the vertical electrical sounding method for the pre-Tertiary basement mapping in the area of the Central Slovakian Neovolcanites. Vertical electrical sounding method represents the most common applied geophysics technique due to its relatively simple realization in the field. Basic principle of the VES method is the increasing of depth radius which depends on the distance between the marginal electrodes. The middle measuring point of the electrode systems always remains in one position. Use of this specific method was set due to assumption about the different resistivity between different geoelectrical environments in the pre-Tertiary basement built up mostly of carbonates. Ten probes, with one parametrical, were measured. Especially, the parametrical VES measuring on the already existing parametrical boreholes with known geological profile is important in the areas with complicate geological setting. Processing of the measured data consisted primarily in the recounting of the measured resistivity into apparent measured resistivity (ρ_z) values. Thereafter, they were processed according to the distance between the most extreme electrodes. Resistivity sounding curves represent the final output data. Quantitative interpretation was performed on all probes. After the comparison between measured and theoretical VES curves data, the results, in the form of interpreted measuring resistivity data ρ_z and thickness of the particular geoelectrical horizons, were established. Interpretation was carried out by three independent approaches: Resix software, VesInt software and with templates method. Cross-sections were made according to the achieved results. Vertical izoohmic cross-sections, with linear scale AB/2, were created within the qualitative

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interpretation. This type of cross-sections provides the best view on the electrical layers dipping angles. As a result, we can state the successful mapping of the pre-Tertiary basement position in the explored area. The basement consists mostly of Triassic carbonates.

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Key words: vertical electrical sounding (VES), resistivity measurements, izohmic cross-sections, Central Slovakian Neovulkanites