

The Tethyan zone in the geotectonic context of the Pannonian–Carpathian system

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Magnetotelluric results obtained along the two profiles crossing the Eastern part of the Pannonian Basin, southward of the Apuseni Mountains, the Transylvanian Basin and the flexure zone of the South Carpathians, are presented. The paper points out the vertical development of the Dacides, Transylvanides and their sedimentary cover by means of the resistivity contrast limits and supplies information regarding the transition zone from the lower crust to the upper mantle (18–24 km for the Inner Dacides and 28–36 km for the Median Dacides), as well as the upper limit of the asthenosphere, emphasized at 60–70 km depth.

The thickness and the making of the sedimentary cover

is revealed, too. The mapping of the major Tethyan suture (ophiolitic suture), placed between two continental crustal blocks belonging to the Inner and Median Dacides, which offers important elements to the study of the evolution of the Pannonian–Carpathian system is also significant. The features of the pseudosections elaborated for the electrical resistivity and phase distribution, depending on the depth, are related to the transcrustal fracture and the main tectonic relationship, as well as to the obvious trend of subduction, characterizing the major tectonical units. As concerning the volcanic activity, some important intrusive bodies (Neogene and Cretaceous–Paleocene in age) are individualized. By correlating these data it was possible to elaborate quantitative models and to sustain certain hypotheses regarding the evolution of the above mentioned area.