

CHARACTERISTICS OF THE ELECTRIC CONDUCTORS IN THE LITHOSPHERE OF THE PANNONIAN BASIN

ANTAL ÁDÁM, Attila Novák, László Szarka

Geodetic and Geophysical Research Institute of the Hungarian Academy of Sciences, H-9400 Sopron, POB 5

Since the 1960's hundreds of long-period telluric/magnetotelluric (MT) and geomagnetic deep soundings have been carried out in the Pannonian Basin (PB). The PB consists of two microplates of different continental affinity (ALCAPA and TISIA). The measurements revealed the resistivity distribution in the crust and in the mantle, in connection with physical/geodynamical processes and structural phenomena. The following conductivity features will be presented and discussed:

- Crustal conductors in the deep fractures, first of all along the boundaries of the microplates (Periadriatic-Balaton Line, Midhungarian Line, etc.);
- The extensional characteristics of the PB, appearing especially in the narrow rifts, e.g. in the deep Békés Graben and in significant MT anisotropy throughout the whole Basin;
- The structure of the large areal conductor in Transdanubia (TCA) containing graphite and fluid. Both graphite and fluid influence the geodynamics (including the earthquakes) and seismic attenuation of the area;
- A guess about the midcrustal conductor due to dehydration taking place in the transition zone between seismic active brittle and silent ductile zones, and its relation to the regional heat flow;
- The shallowness of the conductive asthenosphere, as determined by MT in the highly upheated PB, well correlating with seismic, seismological, geothermal and thermobarographic data (xenoliths);
- Deep mantle electric structure derived by magnetovariational soundings after Semenov et al. (2008).

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Antal Ádám, Geodetic and Geophysical Research Institute of the Hungarian Academy of Sciences, H-9400 Sopron, POB 5, tel. +36-99-508347, adam@ggki.hu