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Relation between xenoliths and magnetotelluric (MT) conductors in the Pannonian Basin (PB) - Short review

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MT deep soundings in the PB detected Conductive Anomalies (CA) both in the crust and at the Lithosphere Asthenosphere Boundary (LAB) in the upper mantle. The shallow depth of the LAB (∼60-70 km) correlates well with the high heat flow in the PB. The origin of the crustal conductors is supposed in fluids and carbonaceous rocks (graphite?).
In the Bakony-Balaton Highland and Nógrád-Gömör Volcanic Fields, Pliocene basalt volcanoes transported peridotite xenoliths to the surface. Behind textural analyses, thermobarometry is the geochemical tool for the deep lithospheric xenoliths to reconstruct their P-T paths and put them in the stratigraphic column of the lithosphere. On the P-T values of xenoliths geotherms – corresponding to the heat flow values of the PB – can be determined for different volcanic areas and a general geotherm too for the PB.
The crossing of these geotherms with the adiabatic curves (AAC) of the lithosphere confirms the shallow position of the LAB according to different geochemists.
Further aim of the study is to find relation between the carbonaceous materials and fluid inclusions in minerals of the xenoliths and the Transdanubian CA in the upper crust and the cause of abrupt decrease of the seismic activity in the middle crust in the volcanic areas.