Geophysical Research Abstracts
Vol. 13, EGU2011-1530, 2011
EGU General Assembly 2011

Red Sea rift is a unique object of experimental research of the structure of mantle convection.

Yurie Khachay (1) and OLga Hachay (2)

(1) Institute of Geophysics, Ural's Department RAS, Yekaterinburg, Russian Federation (yu-khachay@yandex.ru), (2) Institute of Geophysics, Ural's Department RAS, Yekaterinburg, Russian Federation(olga.hachay@r66.ru)

The Read Sea rift is a young geological structure, which contuse its active forming over the rising mantle flow. The central problem of Earth's physics is the answer on the question concerned the mantle convection structure: is it two layered or it is for the whole mantle. Unfortunately the available isotopic geochemistry data do not allow concluding uniquely according to that problem. We showed the opportunity for getting information of the mantle structure using the results of deep magnetotellurics soundings together with analyze of modeling results of different geothermal regime in regions with different structure and intensity of mantle flow [1]. More over if the set of experimental data is sufficient detailed we receive the opportunity to define the experimental information about the type of driving mechanism of the modern convection [2]. The location of the Red Sea rift is convenient to achieve synchronous surface Deep magnetotellurics area or profile soundings perpendicular to the axis of the rift. Realization of that experimental research is more preferable than the sea observations. 1.Bulashevitch Yu.P.,Khachay Yu.V., Hachay O.A. About the possibility of convection structure revealing in the mantle, using MT sounding data.// DAN USSR.1989.V.308,N6, p.1332-1335. 2.Hachay O.A., Khachay Yu.V. About the identification of physical mechanisms of mantle convection with use the method of inverse problem. //Geology and geophysics.1993.N6. Grant RFBR 09-05-00983