

GEOPHYSICAL STUDIES ON THE RESEARCH OF GEOTHERMAL FIELDS IN TURKEY

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ABSTRACT. — Turkey is located on the orogenic, active, tectonic Mediterranean belt where frequently young volcanic activities are observed during the Alpin orogenic phase strong fracturing, tectonics, magma uprise followed by magma chamber locating in the earth crust played important role in the existence of the geothermal systems. Geophysical surveys have very important role in the exploration of geothermal fields in Turkey. Very important information is obtained about the location depth and formation of the reservoir systems by applying several basic geophysical methods according to the fields characteristics. Since the electrical resistivity values decrease in the rock formation in contact with saline water and hot water in a geothermal field electrical resistivity methods are widely used in Turkey too. For reconnaissance of the location and the dimensions of shallow geothermal reservoirs shallow temperature gradient method which is directly applicable like electrical resistivity method is proven to be a fast and cheap method according to the studies carried on in the field. With the equipment available in Turkey geophysical surveys carried out up till date makes it possible to get information from a limited depth which is in the order of few kilometers. Therefore no geophysical data is obtained dealing with the neat source which is much deeper. Application of geophysical surveying methods such as heat flow and much deeper magnetotelluric methods is necessary for both improving the existing proven geothermal system and also exploration of concealed geothermal systems with no surface manifestation like hydrothermally altered rocks, hot spring etc.