

INTERPRATATION OF MAGNETIC FIELD DATA COLLECTED IN MAHALAT AREA AND ITS FAULT ZONE

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Geomagnetic methods have been widely employed to recognize the fault zones and determine the fault parameters. Because of its simplicity and rapidness, this method is primarily used in order to detect the anomalous regions related to large scale structures. In this approach a ground magnetic survey have been performed to study about the subsurface structures of Mahalat area in Markazi province in the west center part of Iran which is also one of the great geothermal potentials in Iran. The most important fault in this zone is called Mahalat fault with an approximately E-W bearing, which crosses from North of Mahalat city that can play a very important role in the seismic events of the area. The magnetic data were collected through 4 profiles, approximately 500 data point were measured in each 150m spacing stations by a proton magnetometer. since the profiles are not parallel to each other and because of the ambiguity of the geology of such an area, the data should be Interpreted partly via special modeling after the appropriate processing .Here we discuss the matter by applying an automatic inversion scheme and related a computer program to invert the magnetic anomalies of the fault. The inversion scheme finds the initial values of the model parameters and improves them iteratively using Marquart's optimization technique.

Magnetic field data, Mahalat, Marquart's optimization technique

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