USING MAGNETIC METHOD FOR DETERMINING CHARACTRISTICS OF FAULT ZONE IN ARAK, MARKAZI PROVINCE, IRAN

MOHAMMADALI KARIMI 1, Mahmoud Mirzaei 2

1. Institute of Geophysics, University of Tehran, Tehran, Iran, Email:saman1304@gmail.com
2. University of Arak, m-mirzaei@ua.ac.ir

Magnetic method has been widely employed in different geophysical surveys and specially in detecting hidden subsurface structure. This study has been performed in Arak, Markazi province in Iran along different profiles cross to the 2 faults, Talkhab and Tabarteh.

We measure the total earth magnetic field by using of Proton magnetometer in any station for all profiles. Having mapped the total field magnetic anomaly along each profile it is possible to detect fault zone approximately.

We used Geosoft program to remove noises and execute different filters. Then we submitted the anomalous part of the profile to an inversion scheme. An automatic inversion scheme and related computer program in FORTRAN77 has been used to invert magnetic anomalies, this inversion scheme uses of Marquardt-Levenberg algorithm for optimization and determining unknown parameters of the fault model for each profile.

Results of this study presented different characteristics of faults such as depth to the top and buttom of the fault, dip angle and made it possible to relocate the fault zone precisely.

The obtained results have good correlation with geological information and geophysical surveys done there before.

Inversion,magnetic field,fault parameter

Mohammadali Karimi ,University of Tehran, institute of geophysics, North Karegar, Email:saman1304@gmail.com, tel: +98-911139-5523