

عنوان مقاله:

Magnetotelluric Evidence for Electrical Anisotropy in the Sabalan Geothermal Reservoir, Northwestern Iran

محل انتشار:

مجله فیزیک زمین و فضا، دوره 48، شماره 4 (سال: 1401)

تعداد صفحات اصل مقاله: 11

نویسندگان:

Zahra Sadat Mirhadi - *Department of Earth Physics, Institute of Geophysics, University of Tehran, Tehran, Iran. E-mail: zahramirhadi@ut.ac.ir*

Banafsheh Habibian Dehkordi - *Corresponding Author, Department of Earth Physics, Institute of Geophysics, University of Tehran, Tehran, Iran. E-mail: bhabibian@ut.ac.ir*

خلاصه مقاله:

Ignoring electrical anisotropy, if present, results in inaccurate modeling of electromagnetic data and unreliable subsequent interpretation. Its identification through the data analysis procedure, therefore, can lead to the selection of the correct algorithm for modeling and inversion and ultimately trustworthy interpretation. In this study, a part of the magnetotelluric data acquired on Sabalan volcano, located in northwestern Iran, was examined in terms of the presence of electrical anisotropy. For this purpose, penetration depths, anisotropy coefficients, phase tensor, induction vectors, and distortion parameters were considered. The results confirm significant signatures for anisotropic features in the area in the form of different depths of two polarizations, high anisotropy magnitudes, and consistent deviation of the phase tensor main axes and anisotropy directions from the regional trend. This is consistent with the outflow direction towards the Moil valley, indicated by previous studies and the high density of fractures and faults related to the setting of hydrothermal reservoirs as the main path of fluid flow.

کلمات کلیدی:

magnetotellurics, electrical anisotropy, Electrical conductivity, Sabalan Mountains, phase tensor

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1781447>

