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.Curie depth, Geothermal exploration, Iran, Kerman, Satellite magnetic field model

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خلاصه مقاله:

In this paper an indirect method is presented to detect potential geothermal sites in Kerman province, southeast Iran. Geothermal heat flux is one of the main parameters to be investigated in geothermal exploration programs. However, few direct heat flux measurements are available for Iran. Given the proved relation between Curie depths and heat flux, magnetic data can be used to calculate the Curie depths in the areas where few or no direct heat flow measurements are available. The method presented here uses an iterative forward modeling approach to calculate the Curie depth in Kerman Province. It has used the satellite magnetic crustal field model of MF۵ obtained from CHAMP mission. The equivalent source magnetic dipole method was used to estimate the magnetic crustal thickness from the observed induced field. The obtained Curie map reveals an area with very low Curie depth in the southeast Kerman. The area may be considered as a potential geothermal site. Geological evidence confirmed our findings for the .probability of a geothermal site in the area

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