

عنوان مقاله:

(Magnetic susceptibility as a tool for mineral exploration (Case study: Southern of Zagros Mountains

محل انتشار:

مجله بین المللی معدن و مهندسی زمین, دوره 49, شماره 1 (سال: 1394)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

Magnetic susceptibility has been extensively used to determine the magnetic properties of rocks for different applications, such as hydrocarbon or mineral explorations. This magnetic quantity can be directly measured in an accurate but time-consuming operation, or it can be mathematically approximated using a reliable procedure to achieve a desired accuracy. The Poisson theory is one of the most well-known approaches which provide a meaningful relationship between the earth's gravity and magnetic fields to derive the magnetic susceptibility. In this approach, the reliability and efficiency of the derived magnetic susceptibility depends on the method of computation of the gravity gradient tensor. We investigated two different methods of determination of gradient tensor; different distance method and Fourier transform technique. From the investigation, the Fourier transform method was more consistent with the geological features which led to more reliable information required for mineral explorations. The performance of the Poisson theory, the different distance method, and the Fourier transform was investigated in the coastal Fars, in Iran. This was highly disposing for geological and mineral features. Salt domes in the study area were detected and results compared with the available geological map.

کلمات کلیدی:

fourier transforms, gravity gradient tensor, magnetic susceptibility, salt glacier

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