REGULARIZED INVERSE PROBLEM OF MAGNETIC FIELD FROM A LAYERED EARTH STRUCTURE

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Abstract

In this paper, analytical solution of magnetic field response from DC source located on a layered uniform conductive host medium is formulated. The Hankel transforms are used to solve the magnetic field and expressed in terms of integral expressions. In order to determine the magnetic field, the numerical solutions are computed. The regularized technique is used to invert the geo-electrical resistivity sounding based on the measurement of static magnetic field. The proposed method is the regularized conjugate gradient (RCG) method which is used to interpret the magnetic field data gathered from a layered earth structure. A comparison of this technique with the conventional conjugate gradient (CG) and Levenberg-Marquardt (LM) methods on a test model is presented.