

Born近似快速三维反演井地电法数据

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摘要 本篇研究了井中电偶极激发地面接收的井地电法的快速反演成像问题.我们采用了Born近似方法和重加权正则化共轭梯度法(RRCG)算法.数值计算的结果表明Born近似是一种有效的井地电法三维快速反演方法,同时也说明井地电法监测油水前驱和储层边界预测的观测数据可以用该方法进行快速三维反演成像.

关键词 [井地电法](#) [Born近似](#),[重加权正则化共轭梯度法](#),[电偶极](#)

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Fast 3D inversion of borehole ground electrical method data based on born approximation

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Abstract The main goal of this paper is to develop a method of 3D imaging for the field excited by a electrical dipole located in borehole and received at the surface of the earth. Our method is based on the Born Approximation and re-weighted regularized conjugate gradient (RRCG) method. The numerical result demonstrates the Born Approximation can be effectively used for 3D imaging for borehole-ground electrical method. It also demonstrates that the method can be used as the basis for fast 3D inversion in reservoir monitoring application and in water injection exploration.

Key words [borehole-ground electrical method](#) [born approximation](#) [re-weighted regularized conjugate gradient \(RRCG\) method](#) [electrical dipole](#)

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