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坑道大极距偶极电阻率测深异常特征

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摘要　本文着重计算和讨论坑道内大极距偶极-偶极测深异常特征.首先介绍有限元模拟大极距电阻率测深时的区域剖分和坑道模型设计方法；然后对坑道和全空间电阻率测深结果进行计算和分析.计算结果表明，当坑道内偶极测深的极距大于坑道截面尺寸时，坑道角与坑道面断面异常形态差异不大；视电阻率值只与断面和地质体间的距离有关；坑道空腔的屏蔽效应并不明显，坑道内各个测深断面的异常幅值和形态与全空间中观测结果非常相似.

关键词　坑道,电阻率测深,偶极-偶极,有限元

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Anomalous of large polar distance dipole-dipole resistivity sounding in tunnel

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Abstract

The anomalous character of large polar distance dipole-dipole resistivity sounding in tunnel is calculated and discussed in this paper. Firstly, division of region and design of tunnel model in modeling using FEM are introduced. Then, the sounding sections of resistivity in tunnel and full space are calculated and analyzed. The results show, when polar distance is bigger than the size of cross section of tunnel, the difference of anomalous feature between the corner-sections and wall-sections in tunnel is very small. The apparent resistivity is only related to the distance between section and bodies. The shielding effect of the tunnel is not so evident that the character and value of anomalous are similar with those in full space.

Key words tunnel resistivity sounding dipole-dipole FEM

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