应用地球物理学 最新目录 | 下期目录 | 过刊浏览 | 高级检索 << Previous Articles | Next Articles >>

ABP法在高密度电阻率法反演中的应用

张凌云, 刘鸿福*

太原理工大学矿业工程学院,太原 030024

The application of ABP method in high-density resistivity method inversion

ZHANG Ling-Yun, LIU Hong-Fu*

College of Mining Engineering, Taiyuan University of Technology, Taiyuan 030024,China

| 摘要 | 参考文献 | 相关文章 |

Download: PDF (671KB) HTML 1KB Export: BibTeX or EndNote (RIS) Supporting Info

摘要 非线性反演方法作为地球物理反演的一个重要分支,在地球物理反演中发挥着特有的作用.近年来学者对非线性联合反演研究较多,但目前仍未有实质性的研究进展;本文尝试利用BP(Back Propagation)神经网络优化方法与蚁群算法联合演算,实现高密度电阻率法的电阻率二维非线性反演.通过两组模型的结果比较,BP与ABP法的反演较传统反演法优势较为突出,而且ABP(Ant colony optimization-Back Propagation)方法明显优于BP神经网络反演法,它可以克服BP神经网络反演方法的不足、减少迭代次数、节约计算时间,获得更好的反演结果.

关键词: 蚁群算法 BP神经网络 二维反演

Abstract: As an important branch of geophysical inversion, non-linear inversion method has played a unique role in geophysical inversion. In recent years, more researchers lay emphasis on non-linear joint inversion, but has not made any substantial progresses. This paper tried to achieve high density resistivity two-dimensional non-linear inversion by using the joint calculus of BP neural network optimization method and ant colony algorithm. A comparison of the results revealed that the ABP method is much better than BP neural network inversion method, the former can overcome the deficiencies of BP neural network inversion method, reduce the number of iterations, save computing time and finally obtain a better inversion result.

Keywords: Ant colony optimization BP neural network Two-dimensional inversion

Corresponding Authors: 刘鸿福,男,教授,太原理工大学矿业工程学院博士生导师.E-mail:lhfcxp@163.com Email: lhfcxp@163.com

About author: 张凌云,女,1978年出生,山西平遥人,太原理工大学矿业工程学院博士研究生,研究方向为地球探测与信息技术.

链接本文:

http://www.geophy.cn/CN/10.3969/j.issn.0001-5733.2011.01.024 或 http://www.geophy.cn/CN/Y2011/V54/I1/227

Service
- 把本文推荐给朋友
- 加入我的书架
- 加入引用管理器
- Email Alert
- RSS

作者相关文章
- 张凌云
- 刘鸿福