

人工神经网络系统在接收函数反演中的应用

蔡水库¹,王有学²

(1.海南地质综合勘察设计院,海口 570206; 2.桂林工学院资源与环境工程系,桂林 541004)

收稿日期 2007-9-10 修回日期 2007-10-20 网络版发布日期 2007-12-20 接受日期

摘要 为使接收函数的反演更为简便,本文提出了一种基于人工神经网络误差反传(BP)算法的接收函数反演新方法,该方法采用人工神经网络反演系统,避免了接收函数反演过程中复杂的地震响应计算及耗时的雅可比矩阵计算,只需经过学习训练就能够解决复杂的实际问题,而且具有记忆功能,这使接收函数的反演工作具有延续性和可继承性.理论数据的反演计算结果表明,该方法是切实可行的.

关键词 [接收函数](#),[人工神经网络](#),[BP算法](#),[速度结构反演](#)

分类号 [P631](#)

DOI:

New inversion method of artificial neural network in receiver functions inversion

CAI Shui-ku¹, WANG You-xue²

(1.Hainan Geological Survey,Haikou 570206,China; 2. Department of Resource and Environmental Engineering, Guilin Institute of Technology,Guilin 541004,China)

Received 2007-9-10 Revised 2007-10-20 Online 2007-12-20 Accepted

Abstract A new inversion method of artificial neural network is presented for the purpose of simplification and more general application for the inversion method in receiver functions research. On the basis of back propagation(BP) algorithm, an adaptive inversion system of artificial neural network had been designed and developed. The system avoids complicated calculations of seismic response and Jacobi matrix .It also can be used to solve some practical problem through learning and training. This method can memorize and make the inversion a continuous process which depends not only on current event but also the previous event.

Key words [receiver functions](#) [artificial neural net work](#) [BP algorithm](#) [inversion of velocity](#)

通讯作者:

蔡水库 caishuiku@126.com

作者个人主页: 蔡水库¹;王有学²

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(795KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [引用本文](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“接收函数,人工神经网络,BP算法,速度结构反演”的 相关文章](#)

▶ 本文作者相关文章

· [蔡水库](#)

· [王有学](#)