

基于层叠模型的岩土材料流变本构关系识别

范厚彬¹, 樊志华², 陆耀忠¹

(1. 浙江交通工程建设集团, 浙江 杭州 310031; 2. 杭州电子工业学院 机电分院, 浙江 杭州 310037)

收稿日期 2003-10-23 修回日期 2003-12-23 网络版发布日期 2007-2-7 接受日期 2003-10-23

摘要 层叠模型是一个强大流变模型库, 层叠模型参数确定的过程也是本构关系识别的过程。在它的基础上, 介绍了一种岩土材料流变本构关系的识别方法, 为克服流变本构模型识别过程中强烈依赖于特定模型的不足提供了新的思路。通过目标函数对设计变量的敏感度分析选取非线性优化初始值, 较有效地克服了它在流变本构模型参数确定过程中易陷入局部极值的不足, 从而为非线性位移反分析法(有限元与复形优化方法相结合)提供了一种初始值选取方法。

关键词 [岩土力学](#); [层叠模型](#); [位移反分析](#); [优化方法](#)

分类号

IDENTIFICATION OF RHEOLOGICAL CONSTITUTIVE RELATION OF ENGINEERING MATERIAL BASED ON OVERLAYER MODEL

FAN Hou-bin¹, FAN Zhi-hua², LU Yao-zhong¹

(1. Zhejiang Provincial Transportation Engineering Construction Group, Hangzhou 310031, China;
2. Hangzhou University of Electronic Science and Technology, Hangzhou 310037, China)

Abstract

The overlayer model is a powerful library of rheological models, and the procedure of determining the parameters of the overlayer model is also the procedure of identifying the constitutive relation. Based on this model, a novel approach of identifying the rheological constitutive relation of engineering material, is introduced to overcome the deficiency of the traditional identification procedure which relies too much on specific models. The nonlinear optimistic initial values of design variables are selected by analyzing the sensitivity of these variables with object function, then the deficiency of easily falling into local extreme point during the determination of parameters of rheological constitutive model is avoided effectively. A selection scheme of initial value in nonlinear displacement back-analysis(combined with the FEM and the complex optimization method) is also proposed.

Key words

[rock and soil mechanics](#); [overlayer model](#); [displacement back-analysis](#); [optimization method](#)

DOI:

扩展功能
本文信息
▶ Supporting info
▶ PDF(96KB)
▶ [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
▶ 复制索引
▶ Email Alert
▶ 文章反馈
▶ 浏览反馈信息
相关信息
▶ 本刊中 包含 “岩土力学; 层叠模型; 位移反分析; 优化方法” 的相关文章
▶ 本文作者相关文章
· 范厚彬
· 樊志华
· 陆耀忠

