Journal of Systems Science and Complexity 1990 3 (3): 231-242 ISSN: 1000-0577 CN: 11-2019/O1

论文

FUZZY MODELS FOR ESTIMATION OF SURFACE GROUND SUBSIDENCE

Li Wenxiu

Changsha Research Institute of Mining and Metallurgy,Ministry of Metallurgical Industry

收稿日期 修回日期 网络版发布日期 接受日期

摘要 In this paper, the mathematical theory of fuzzy probability is used for the problems of rock mass mechanics due to excavation, especially mining.A mathematical model is developed for the movement and deformation of rock mass on the basis of the assumption that the displacement and deformation of rock mass is a fuzzy event, and from this model theoretical formulas are derived for calculating the displacement of rock massdue to excavation. The theories of both the two-and three-dimensional problems are developed and applied to the analysis of engineering problems in excavation. The agreement of the theoretical results with the field measurements shows that our model is satisfactory and the formulae obtained are valid and thus can be effectively used for predicting the displacements and deformations and the safety evaluation of the buildings on the ground surface.

关键词 Fuzzy probability, membership function,
分类号

FUZZY MODELS FOR ESTIMATION OF SURFACE GROUND SUBSIDENCE

Li Wenxiu

Changsha Research Institute of Mining and Metallurgy,Ministry of Metallurgical Industry

Abstract In this paper, the mathematical theory of fuzzy probability is used for the problems of rock mass mechanics due to excavation, especially mining.A mathematical model is developed for the movement and deformation of rock mass on the basis of the assumption that the displacement and deformation of rock mass is a fuzzy event, and from this model theoretical formulas are derived for calculating the displacement of rock massdue to excavation. The theories of both the two-and three-dimensional problems are developed and applied to the analysis of engineering problems in excavation. The agreement of the theoretical results with the field measurements shows that our model is satisfactory and the formulae obtained are valid and thus can be effectively used for predicting the displacements and deformations and the safety evaluation of the buildings on the ground surface.

Key words Fuzzy probability membership function underground mining rock mass displacement surface ground s

DOI:

扩展功能
本文信息
Supporting info
PDF(0KB)
[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“Fuzzy probability, membership function,”的 相关文章
本文作者相关文章
· Li Wenxiu

通讯作者