

金川二矿某巷道围岩力学参数对变形的敏感性分析

侯哲生^{1, 2}, 李 晓¹, 王思敬¹, 路世豹³

(1. 中国科学院 地质与地球物理研究所, 北京 100029; 2. 烟台大学 土木工程
学院, 山东 烟台 264005;

3. 青岛理工大学 土木工程学院, 山东 青岛 266033)

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摘要 为了给金川镍矿采场及巷道稳定性分析的参数选取提供可借鉴的依据, 利用非线性弹塑性有限元法, 对位于金川二矿区底盘某采准巷道围岩力学参数(变形模量、泊松比、粘聚力和内摩擦角)对变形的敏感性进行分析。分析结果表明, 这4个参数对变形的敏感度不尽相同, 从大到小依次为: 变形模量、内摩擦角、泊松比、粘聚力, 且其变形模量与内摩擦角的敏感度远大于泊松比和粘聚力的敏感度。这一分析结果对今后金川镍矿的稳定性分析具有一定的参考价值, 尤其要求对变形模量与内摩擦角的选取一定要谨慎。

关键词 [岩石力学](#); [金川二矿](#); [力学参数](#); [变形](#); [敏感性分析](#)

分类号

SENSITIVITY ANALYSIS OF MECHANICAL PARAMETERS TO DEFORMATION OF SURROUNDING ROCKS FOR A TUNNEL IN JINCHUAN DEPOSIT II

HOU Zhe-sheng^{1, 2}, LI Xiao¹, WANG Si-jing¹, LU Shi-bao³

(1. Institute of Geology and Geophysics, The Chinese Academy of Sciences, Beijing 100029, China;

2. School of Civil Engineering, Yantai University, Yantai 264005, China;

3. School of Civil Engineering, Qingdao Technological University, Qingdao 266033, China)

Abstract

In order to provide bases for parameters selection of stability analysis in Jinchuan nickel mine, which is one of the largest bases of metal resources, nonlinear elastoplastic finite element method is used for the sensitivity analysis of four mechanical parameters to the deformation of surrounding rocks of a tunnel in Jinchuan deposit II. The analytical results show that the sensitivities of these parameters to deformation are different and the sequences of sensitivity, in a decreasing order, are the deformation modulus, the friction angle, the Poisson's ratio, and the cohesion force. Especially, the sensitivities of deformation modulus and friction angle are comparatively higher than those of the two other parameters. Based on this result, more attentions should be paid to the deformation modulus and the friction angle in similar studies and analysis in Jinchuan deposit II.

Key words [rock mechanics](#); [Jinchuan deposit II](#); [mechanical parameters](#); [deformation](#); [sensitivity analysis](#)

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