

论文
块体理论赤平解析法在锦屏二级水电站皮带机隧洞稳定分析中的应用

梁 宁^{①②} 伍法权^① | 刘 彤^① 刘建友^①

^①中国科学院地质与地球物理研究所 ■北京 ■100029

^②中国科学院研究生院 ■北京 ■100049

摘要:

块体理论是适用于分析节理发育破碎刚性岩体稳定性的有效方法。锦屏二级水电站皮带机隧洞岩体不连续面发育,隧洞开挖面是否产生可动块体影响着皮带机隧洞的稳定性。在对皮带机隧洞详细的地质调查和研究基础上,运用块体理论赤平解析法分析皮带机隧洞的稳定性,对可不连续面和开挖面构成的可动块体滑动形式进行判断,得出了块体的失稳形式以单面滑动为主,双面滑动和垂直掉块相对较少的结论;同时得出皮带机隧洞各部分可动块体分布的直观统计结果,即皮带机隧洞左侧墙,左、右顶拱失稳块体较多,右侧墙较少。

关键词: 隧洞 不连续面 块体理论赤平解析法 块体稳定分析

APPLICATION OF BLOCK THEORY BASED STEREO-ANALYTICAL METHOD TO STABILITY ANALYSIS OF CONVEYOR TUNNEL AT JINPING II HYDROPOWER STATION

LIANG Ning^{①②} WU Faquan^① LIU Tong^① LIU Jianyou^①

^①Key Lab of Engineering Geomechanics, Institute of Geology and Geophysics, Chinese Academy of Sciences|Beijing 100029

^②Graduate University of Chinese Academy of Sciences, Beijing 100049

Abstract:

Block theory is an effective method on stability analysis of fractured rigid rock mass. There are a lot of discontinuous planes developed in rock mass of Jinping II hydropower station conveyor tunnel. So the stability of conveyor tunnel is related with the presence of unstable blocks on excavation planes. This paper deals with the stability of the conveyor tunnel with Block theory based stereo-analytical method on the basis of detailed investigation of rock mass data. It makes judgments on the movable blocks such as sliding types that are induced by all rock discontinuous planes on each excavation plane of the conveyor tunnel. A conclusion is obtained that the sliding type of blocks is mainly single sliding. A relatively few sliding types of double-sided sliding and vertical block falling are also found. Also, the obvious statistical distribution result on the movable blocks in the conveyor tunnel indicates that there are some more instability blocks in the left wall, the left and right arches than the right wall.

Keywords: Tunnel, Discontinuous plane, Stereo-analytical method, Block theory, Stability analysis, Jinping II hydropower station

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通讯作者:

作者简介:

作者Email: liangning@mail.igcas.ac.cn

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