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## 缓倾角层状岩质边坡小危岩体失稳破坏模式与稳定性评价

刘宏, 宋建波, 向喜琼

(贵州大学 喀斯特环境与地质灾害防治教育部重点实验室, 贵州 贵阳 550003)

收稿日期 2005-4-4 修回日期 2005-7-23 网络版发布日期 2006-12-15 接受日期

**摘要** 缓倾角层状岩质边坡是小危岩体出露的主要坡型之一。影响小危岩体失稳破坏的主要因素为边坡地形条件、地层岩性和岩体结构, 诱发因素有暴雨、地震和人工开挖等。小危岩体失稳破坏的基本模式可概化为倾倒-崩落、拉裂-崩落和滑落-崩落3种。当缓倾内层状岩质边坡的岩层较厚, 岩性呈软硬互层状产出, 或岩层间软弱夹层较厚时, 常发生倾倒-崩落式破坏; 当缓倾内层状岩质边坡的岩层较薄, 且岩性较均一, 或层间结构面力学性质较好时, 常发生拉裂-崩落式破坏; 当缓倾角层状岩质边坡岩层倾向坡外时, 在陡倾构造节理和风化卸荷裂隙切割下, 常发生滑移-崩落式破坏。针对这3种破坏模式, 提出相应的稳定性评价理论和方法。最后, 以一修理厂陡崖边坡为例, 系统阐述缓倾角层状岩质边坡小危岩体稳定性评价理论和方法。

**关键词** [岩石力学](#) [缓倾角层状岩质边坡](#) [小危岩体](#) [失稳破坏模式](#) [稳定性评价](#)

分类号

## FAILURE MODEL AND STABILITY EVALUATION OF SMALL INSTABLE ROCKS DISTRIBUTED IN LOW-ANGLED STRATOFABRIC ROCK SLOPE

LIU Hong, SONG Jianbo, XIANG Xiqiong

(Key Laboratory of Karst Environment and Geohazard Prevention, Ministry of Education, Guizhou University, Guiyang, Guizhou 550003, China)

### Abstract

Usually, there are densely distributed small instable rocks in a low-angled stratofabric rock slope. Topographical condition, lithologic characteristics and rock mass structure of the slope control small instable rocks stability, and the influencing factors include strong rainfall, earthquake, and human's cutting works, etc.. The failure models for a small instable rock distributed on a low-angled stratofabric rock slope are suggested with tilting-collapsing, splitting-collapsing and sliding-collapsing. If the slope's rockmass is low counter-inclined or thick-interbedded with soft interlayer, its failure model is inclined to be tilting-collapsing; if the slope's rockmass is homogeneous and thin-bedded with hard discontinuity, its failure model is inclined to be splitting-collapsing; if the slope's rockmass is low sequence-inclined with densely deep tectonic joints and weathering fissures, its failure model is inclined to be sliding-collapsing. Then, the stability evaluation methods for these failure models are deduced respectively. By taking a steep slope behind the reparation workshop for example, the stability evaluation methods for small instable rocks distributed on low-angled stratofabric rock slope are systematically discussed. The research result shows, it is indispensable to investigate rockmass structure and analyze slope's failure model in small instable rocks stability evaluation.

**Key words** [rock mechanics](#) [low-angled stratofabric rock slope](#) [small instable rock](#) [failure model](#) [stability evaluation](#)

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