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Title: Stability analysis and control measures of Xiaonanhai slumping mass

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关键词: 崩滑体; 有限元法; 强度折减; 防治措施

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摘要: 根据崩滑体的基本特征和地质条件,采用有限元软件ANSYS10.0,运用强度折减法在自然和连续暴雨两种状态下对崩滑体进行了模拟计算,确定了两种状态下崩滑体的安全系数与滑动面。根据地质勘查和数值模拟结果,确定小南海崩滑体整体处于基本稳定至稳定状态,但其前缘有可能发生滑塌,同时现有地形改变后,崩滑体仍有整体失稳的可能。分析了导致边坡稳定性下降的因素并提出了生物措施和工程措施相结合的防治方案,为崩滑体治理提供了依据。

Abstract: According to the basic characteristics and geological conditions of slumping mass,this paper presents the simulation of the slumping mass under the natural and rain condition to find out safety factors and the location of slip surface by use of strength reduction finite element method based on ANSYS software.On the basis of the results of geological investigation and numerical simulation,it is concluded that Xiaonanhai slumping mass is in the basically stable to stable conditions on the whole.However,the leading edge slump may occur,and if the existing topography changes,the whole slumping mass may be instable.This paper analyzes the factors leading to decline of slope stability and proposes treatment plans combining biological and engineering measures,in order to provide scientific basis for governance of landslide.

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