

滑坡的易滑度分区及其概率预报模式

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摘要 滑坡的发生主要由地形、地质和降雨三方面因素决定。基于区域地质 - 气象耦合分析的思路, 有可能提高区域性滑坡的预报精度。首先通过将降雨条件和地质环境条件相结合的方法, 提出一种新的滑坡概率预报模式, 利用数理统计分析, 提出利用最大 24 h 雨强和前 15 d 实效降雨量作为滑坡灾害发生的短期预报判据; 然后以重庆市区作为研究对象, 选择岩性组合、地形坡度、边坡形态、岩体结构和水文地质五大因素及其 21 种状态为预测变量, 利用信息量法进行了易滑度的分区; 最后, 对概率预报滑坡的可行性进行了实例分析和探讨。

关键词 [工程地质; 滑坡; 降雨; 易滑度分区; 信息量法; 概率预报](#)

分类号

LANDSLIDE SUSCEPTIBILITY ZONING AND ITS PROBABILISTIC FORECAST

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Abstract

How to predict and forecast the landslide hazard effectively is always a key point for prevention from casualty and economic loss caused by landslides. Based on the coupling analysis of the geology and meteorology, it is possible to improve the precision of the landslide forecast. The occurrence of landslides is mainly controlled by the following three factors: topography, geology and rainfall. A new method of landslide probabilistic forecast is proposed considering the combination of geologic environment with weather conditions. The urban area of Chongqing, which is one of the cities with most serious landslides in China, is taken as the study example. Taking into account the geologic environmental factors such as slope gradient, slope shape, lithology combination, structures of rock mass and hydrologic geology, the landslide susceptibility zonation is conducted with the information model. The prediction criterion of landslides in each susceptibility subarea is established by two variable combinations: the maximum 24 hours rainfall and the antecedent effective precipitation of 15 days. Finally, the feasibility of the probabilistic forecast on landslides using weather prediction is discussed with an actual example.

Key words [engineering geology; landslide; rainfall; landslide susceptibility zoning; information model; probabilistic forecast](#)

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