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滑坡触发因素及其影响的原位试验

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摘要: 在相同地质条件下, 采用人工降雨模拟试验和机械开挖模拟原位试验, 研究滑坡触发因素及其对滑坡的影响。研究表明: 堆积层边坡在降雨入渗影响下多为浅层松弛型破坏, 降雨入渗造成土体中孔隙水压力增加, 致使边坡土体的抗剪强度由于有效应力减少及土体吸水软化而降低; 堆积层边坡在切坡开挖影响下多为浅层牵引式破坏, 变形形态为从坡面到坡面以下逐渐减小的松弛形变形; 降雨和入渗双重效应可能是降雨诱发堆积层边坡失稳的主要原因之一, 在强降雨影响下, 易发生滑塌事故。该研究结果可为滑坡的时间、空间和强度预报提供理论依据。

关键字: 降雨; 人工开挖; 触发因素; 滑坡

Situ-test of abduction elements of landslide and its influence

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Abstract: In the same geological situation, the rainfall and excavating tests were simulated. The test results show that most accumulation landslides caused by rainfall infiltration are shallow relaxation failure. Rainfall infiltration leads to the increase of pore-water pressure, which may result in the reduction of shear strength due to the decrease of effective stress and wetting-induced softening, the double effects of rainfall and infiltration may be the main reason of rainfall infiltration induced landslides in accumulation landslide. Most of accumulation landslides caused by excavation are shallow draught slope failures. The form of its deformation is relaxation failure, which reduces from dome to the deep part of slope gradually. Due to the influence of strong rainfall, the uncovered accumulation slope after excavation easily leads to collapse accident. The research results can provide some useful informations to forecast occurring time, space and strength of landslide.

Key words: rainfall; artificial excavating; abduction element; landslide

