

200 年重現期降雨促崩潛勢特性分析

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摘要 本文採用定率法結合 GIS 技術,評估流域內各邊坡單元於特定降雨條件之穩定性隨時間的變化關係,藉以預測集水區內降雨誘發岩屑崩滑之發生時間、規模及空間分布。模式考量地文及水文因子於空間與時間之分布變異,透過評估降雨入滲導致暫態地下水壓上升進而對坡地穩定性所造成之影響。另結合 GIS 技術,將傳統單一邊坡穩定分析拓展至整個集水區範圍,同時預測集水區內所有邊坡單元在 200 年重現期降雨條件下之崩塌潛勢、時機及範圍,除能評估各邊坡單元在特定降雨條件下之崩塌潛勢之外,進一步針對潛勢區分布之水文地質特性探討,提供相關崩塌特性之資訊,其成果可供後續防、減災措施擬定之參考。

關鍵詞: 定率法、水文地質特性、崩塌。

Characteristic Analysis of Regional Landslide Potential Induced by 24-Hour Accumulated Rainfall of 200-Year Return Period

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ABSTRACT This paper presents the preliminary early-warning system of regional rainfall-induced landslides using a deterministic approach that couple the physical mechanism with the real-time rainfall data. The model could predict the scale, the triggered time and the spatial distribution of rainfall-induced shallow landslides by considering the spatial and temporal variability of hydro-geological parameters and rainfall intensities. Model calibration was conducted with the use of multi-temporal satellite imagery. Preliminary results demonstrated that good agreement was found between predicted shallow landslide susceptibility and the inventory. Results of predicting the landslide susceptibility under 24-hour accumulated rainfall of 200-year return period and analyzing the hydro-geological characteristic of landslide susceptibility areas could be regarded as a good reference to the authority for hazard mitigation.

Key Words: Deterministic Analysis, hydro-geological characteristic, landslide.

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