

高解析度水文災害預警模式研發

The Study of High-resolution Hydrological Disaster Warning Model

主管單位：國家災害防救科技中心

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摘要

台灣地區因特殊地形、地質與水文條件易於誘發山坡地坍塌，於颱風豪雨侵襲期間，往往造成崩塌等山區災害的發生。本研究採用分形性水文模式與無限邊坡穩定分析理論為基礎，建置 SIMTOP 模式。選用新店溪上游南勢溪流域與重大颱風事件進行模式測試，同時採用崩塌捕捉率、誤報率、預兆得分以及正確率，以評估 SIMTOP 模式之崩塌預警能力。研究結果顯示 SIMTOP 模式分析成果與歷史紀錄大致相符。

關鍵詞：崩塌預警模式、地形性水文模式、無限邊坡穩定

Abstract

Taiwan is prone to hillslope disasters in mountain areas because of its special topographical, geological, and hydrological conditions. During typhoons and rainstorms, severe shallow landslides frequently occur. Hence, highly precise landslide prediction is an important method in practice. The SIMTOP model based on infinite-slope model and TOPMODEL was developed. The upstream areas of Xin-Dian river basin and server Typhoon events were selected for the simulation of SIMTOP model. Three indexes including the probability of landslide detection, false alarm ratio, and threat score (TS) were adopted to assess the performance of SIMTOP model. The results indicate that SIMTOP model are good agreement with the landslide records.

Keywords : Landslide model, TOPMODEL, Infinite -slope model

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