

崩塌流體化地形之判釋分析模式

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摘要 台灣颱風豪雨頻繁，為高雨量的環境，坡地災害發生機率甚高；於諸多土石流災害中，邊坡崩塌流體化常出現在聚落周邊之山坡，對山區居民安全影響甚大。崩塌流體化也稱之為坡面型土石流，其地形與坡面崩塌之地形相近不易區分。本文針對坡面型土石流特性作相關研究，採用莫拉克颱風災後之高屏流域坡面型土石流與未發生土石流之坡面資料各 30 處，萃取出判釋率最高之特性因子，利用區別分析方法進行坡面型土石流發生潛勢分析。研究結果以形狀係數比、坡面平均坡度比、有效集水指標、發生區平均寬度、流動段平均坡度、流動段深寬比、崩塌潛感面積及淺層崩塌預測模式百分比等 8 項因子為預測變數時可得最佳正判率，整體正判率為 90%。坡面型土石流之判釋分析模式，有助於災前判釋坡面型土石流較危險的坡面地區，協助防治及預警工作。

關鍵詞：坡面型土石流、SHALSTAB、區別分析。

Recognition Model of a Fluidized Landslide Slope

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ABSTRACT Caused by Typhoons and monsoon rains frequently, Taiwan is in a high precipitation environment. The probability of slope disaster and mudslides rises year by year. Fluidized landslides often occur and damage the heritage in mountain area causing the serious impact to residents. Fluidized landslide also called Hillslope Debris Flows (HDF) and it's difficult to distinguish with terrain slope landslide from topography. This study proposals a HDF recognition model. 30 HDF and 30 non-HDF induced by Typhoon Morakot in Kaoping River are employed to develop the model. 20 factors of HDFs relating to topography, hydrology, and landslide susceptibility in the watershed were selected. The result of the discriminant analysis shows the classification rate reached 90% in which the catchment indicator, form factor ratio, q/t area percentage of prediction landslide, landslide susceptibility area, average width of effective watershed, hillslope aspect ratio of flow, average slope of flow, and hillslope average slope ratio are the most effective indexes of the model. It is expected that the HDF recognition mode will improve the slope disaster prevention and early warning work to heritages.

Key Words : Hillslope debris flow, SHALSTAB Model, Discriminant Analysis.

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