

山崩災害分析與廣域製圖

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摘 要

以往在國內外所進行的山崩潛感分析多限於小區域之研究性質，且在一個區域建立之潛感模型無法適用於另一區域之潛感製圖，致使此技術停滯於研究與測試階段。經濟部中央地質調查所基於實際需求，自2003年開始規劃及產製全國性山崩潛感圖，目前已完成約全國六成面積，本文將介紹研究團隊近年來的一些突破，並將此全國性山崩潛感/災害分析與廣域製圖的經驗與世人分享。

廣域山崩災害分析與製圖首先面臨的是異質性區域及災害等級一致性的問題。其分析與製圖有下列兩個重點：(1)均勻區劃分及按分區分別建立災害模型，(2)以山崩機率做為山崩災害分級與製圖之依據，使不同分區的分析結果具有一致性而不會有銜接上的問題。除此之外，採用事件型山崩災害分析方法也是使得分析結果能保持一致性的一種必要選擇。

關鍵字：山崩、山崩潛感分析、山崩災害分析、山崩災害圖、邊坡穩定。

Landslide Hazard Analysis and Mapping in a Wide Area

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Abstract

In the past landslide susceptibility analysis, at home and abroad, generally limited to a small area and of research purpose. A susceptibility model established in a region cannot be applied to other areas for susceptibility mapping. This has led to the technology stagnated in research and testing phase. Based on actual demand, the Central Geological Survey, Taiwan, has started a research program since 2003 and put into execution for producing national wise landslide hazard maps since 2007. Up to now, about 60% areas of Taiwan have been mapped with good result. This paper discusses the success on landslide susceptibility/hazard analysis and mapping in a wide region and shares this experience with the world.

The hazard analysis and mapping need to face the heterogeneous features in a wide area and the consistency of results from different regions. This challenge requires the following two methods to resolve: (1) division of homogeneous zones so that a reliable hazard model can be established for a zone, (2) a consistent hazard level must be chosen so that the result among regions will be consistent. Also, the use of an event-based landslide susceptibility/hazard analysis is an important selection to keep the consistency of the results from different analyses.

Key Words: Landslide, Landslide Susceptibility Analysis, Landslide Hazard Analysis, Landslide Hazard Map, Slope Stability.

一、前 言

以往在國內外所進行的山崩潛感分析

(landslide susceptibility analysis)多為小區域之研究性質；在某一接近同質性之小規模流域或集水區內建立潛感模型及繪製山崩潛感分級圖，期能提供區域規劃、工程選址及防災決策之參考。