

## 衛星影像技術應用於崩塌地與土石流災害分析系統之建置

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**摘 要** 坡地土砂災害對自然生態環境體系之破壞,以及對於人類生命財產與國土保安之威脅,乃成為現階段政府所關注的重要防災問題,然而應用遙測衛星影像之光譜反應程度,對崩塌地及土石流災害發生前後之環境變化趨勢分析,將可快速掌握土砂災情擴展資訊與其影響範圍。本研究應用法國 SPOT 及美國 QuickBird 衛星影像分析技術,以台灣雲林草嶺地區清水溪支流野溪編號雲林 A001 土石流危險溪流為案例,進行土石流災害發生前後之光譜反應特性分析。以俾能掌握即時坡地土砂災害資訊之傳遞與災害區域範圍之推估,並初步建立一套兼具地理資訊系統(GIS)與遙感探測技術(RS)之整合式資料庫系統,俾期據以評估分析土砂災害發生前後環境變化與災害擴展趨勢,進而作為災區防(救)災工作方案研判與推展之參考指標。

**關鍵詞** : 崩塌地、土石流、地理資訊系統、遙感探測、衛星影像。

### Applications of Satellite Image Processing Technique on the Establishment of Landslide and Debris Flow Disaster Systems

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**ABSTRACT** Sediment disaster occurring at hill slope regions can damage the natural environment and its ecosystem. These disasters could have detrimental effect on the property, human life and public security of this country. Recently, it has become an important issue recognized by the government and the people in Taiwan. However, the satellite image spectrum reaction technology which can be applied in the identification of landslide and debris flow, can be used to quickly monitor the information of sediment disaster. The SPOT and QuickBird satellite image processing techniques developed in France and U.S.A would be utilized in this study to identify the disaster region in central Taiwan. The analysis of satellite image spectrum reaction on landslide and debris flow control can offer information for estimating and auto-mapping the propagation region of major disaster area. The integration of Geographic Information System (GIS) and Remote Sensing (RS) on establishing the database system can be used as an index and reference to help censure and promote future disaster prevention work and hazard mitigation project executed on the chi-chi earthquake disaster area in central Taiwan.

**Key Words:** landslide, debris flow, geographic information system, remote sensing, satellite image.

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