

莫拉克災區高解析度數值地形製作 及地質災害調查

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摘 要

2009年莫拉克風災衍生小林村重大的崩塌事件，造成嚴重的生命財產損失，經濟部中央地質調查所自2010年起以3年時間利用空載光達完成受災區域的地形掃瞄，產製1m X 1m高解析度數值地形及同步的航照正射影像，藉以建立災後高精度的數值地形資料庫，並應用於調查分析地質敏感區、地質特性與地形、地質災害潛勢評估與水系特性分析等；其中對於潛在大規模崩塌的判釋與調查視為重點工作，經過初步之判釋與現地調查結果，臺灣中部與南部地區可找出超過數百處可能屬於大規模崩塌的潛勢區域，並對於有聚落保全對象的崩塌潛勢區域設置單頻的GPS接收儀、雨量計與經緯儀測距儀器等簡易監測儀器，藉以觀察各崩場地的地表滑動趨勢與活動性，未來再針對再針對具有較明顯地表變形位移的區域逐步進行地質鑽探、測傾管、孔內伸縮計、地表伸張計、地層變位計等細部觀測。

關鍵字：空載光達，數值地形模型，大規模崩塌，自然災害，全球衛星定位系統。

High Resolution DEM Generation and Geohazards Susceptibility Analysis for the Disaster Areas Caused by Typhoon Morakot

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Abstract

The heavy rainfall of Typhoon Morakot caused severe damage to infrastructures, property and human lives in southern Taiwan in 2009. The most atrocious incident was the Hsiaolin landslide which buried more than 400 victims. Consequently the airborne LiDAR survey was carried out from 2010 to 2012 by Central Geological Survey, MOEA in Taiwan to produce 1m x 1m high resolution DEM and aerial ortho-photo images in order to build up post-disaster high resolution DEM database and apply to such as investigate and analysis for geologically sensitive areas, Geological and Topography characteristics, Potential geological disaster, River system analysis. the key projects is to investigate and analysis large-scale landslides, the results shows that there are hundreds of large-scale landslides area in central and