

# 摘要

本論文旨在探討國內大型崩塌集水區的植生變遷趨勢，並運用長時序的常態化差異植生指標（Normalized Difference Vegetation Index, NDVI）作為植物生長、變遷狀態評斷之參考；研究試區以臺灣歷年發生天然災害導致大型崩塌之次集水區（南投九份二山、雲林草嶺及高雄小林等三處）為標的，並蒐整 1998 至 2013 年期間 SPOT/VEGETATION 及 Terra/Aqua-MODIS MOD13 的衛星影像 NDVI 數據，進行地物類別分類與數值資訊處理，最後針對時序資料分別採用希爾伯特-黃轉換（Hilbert-Huang Transform, HHT）進行 NDVI 時頻分析與 Mann-Kendall（MK）法進行趨勢檢驗，進而掌握各次集水區內植物生長與變遷趨勢。

關鍵詞：崩塌、植生指標(NDVI)、希爾伯特黃轉換(HHT)、Mann-Kendall (MK) 趨勢檢驗、植生變遷趨勢

# Abstract

This study presented the trend of vegetation variation in large-scale landslide watersheds of Taiwan, and using the long-term Normalized Difference Vegetation Index (NDVI) to analyze the conditions of vegetation growth and transition. The study areas are located at the sub-watersheds (Nantou Chiufengershan, Yunlin Caoling, Kaohsiung Xiaolin) in Taiwan where large-scale landslides occurred due to natural disasters. This study also collected the NDVI data derived from SPOT/VEGETATION and Terra/Aqua-MODIS MOD13 satellite images during 1998 ~ 2013. The data was used to classify land cover types and process digital information. Hilbert-Huang transform (HHT) and Mann-Kendall (MK) trend test were used to analyze the time series data, obtain the time-frequency spectrograms of NDVI, and examine the trends of vegetation growth and transition in each sub-watershed.

Keyword: Landslide, Normalized Difference Vegetation Index (NDVI), Hilbert-Huang Transform (HHT), Mann-Kendall (MK) trend test, Trends of vegetation transition.