

台灣大地重大斷裂帶的特性及演化 與災難性岩土災害

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摘 要

台灣災難性岩土災害，與8條「重大斷裂帶」(圖三)的特性及演化，息息相關。本文，分析這8條「重大斷裂帶」的特性、演化、及相關的岩土災難。

最東的「東海岸與太平洋海床交界大斷崖」(圖三之①)，西臨中央山脈或海岸山脈高達2,000至3,000公尺陡峭的東坡，東臨3,000公尺至5,000公尺深的太平洋海床，經常發生崩塌與落石災害。2010年10月21日梅姬颱風豪雨在東海岸蘇花公路112K-116K引發嚴重坍方災害，20多人遇難。

最西北的「山腳斷裂帶」(圖三之③)，為林口台地與台北盆地間的正斷層。在康熙33年，台北盆地就曾經因地震而陷落成湖。何時重演故事，難以預測；即使沒有近憂，也必須有遠慮。

災難性岩土災害，最常發生在活斷層與溪流連接而成的重大斷裂帶(圖三之④、⑤)。其中的溪流，是水沖刷地表最脆弱的大斷層(帶)而誕生、而持續擴張(變寬)。許多沿溪岸而開闢的道路或開發的社區，常因溪流的擴張(變寬)而崩落溪中，許多跨溪的橋樑也常被洪水或土石流沖斷。

車籠埔斷層(圖三之⑥)在1999年9月21日的逆衝錯動，造成2478人(包括失蹤者)遇難，嚴重的財產損失，與大地環境的重大破壞。

其他尚未發生災難性岩土災害的重大斷裂帶，是許多專家學者擔憂之所在，需要嚴密監測。

關鍵字：重大斷裂帶，特性及演化，災難性岩土災害。

The Characteristics & Evolution of Major Fracture Zones of Taiwan Island and related Catastrophic Geotechnical Disasters

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Abstract

The catastrophic geotechnical disasters in Taiwan are closely related to the characteristics and evolution of major fracture zones on the main island of Taiwan.

The Great-Cliff of the East-Coast of Taiwan Island backs up 2,000 to 3,000 meters high cliff of the Central-Ranges or East-Coastal Ranges to the west, and faces down 3,000 to 5,000 meters deep of the Pacific Ocean bed to the east. Landslides and rockfall disasters occur frequently. On 21st October 2010, the heavy rainfall of Typhoon Maggie caused catastrophic landslides in the section 112K-116K of Su - Hua Highway. More than 20 people lost their lives.

The Shan-Giao Fracture Zone borders the Linkou Tableland and the Taipei Basin has been identified as a normal active fault along which Taipei Basin came down a few meters relative to Linkou-Tableland and became a lake in 1694, due to an earthquake of unknown magnitude.

Most of the catastrophic geotechnical disasters in Taiwan occur in the major fracture zones composed of active faults and streams. The streams sections of this kind of fracture zones were given birth due to the erosion of weak fault zones by surface water. The streams have long been, and still, in the process of widening. So, highways and communities constructed along stream banks lost in the flood torrent of streams during heavy rainfall period. Many bridges crossing the streams are destroyed.

On 21st September 1999, the thrust rupture of Che Lun Pu fault caused 2478 casualties, heavy losses of properties, and severe damages of the geo-environment of Taiwan.

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本基金會訂於 100 年 9 月 30 日舉辦地工技術第 25 次研討會~「河川橋樑基礎及都會區新基礎問題」，會中
將邀請洪如江教授專題演講，相關活動請上基金會網站查詢。