

台灣南部的潮州活動斷層：逆斷層的特徵及地貌學意義

Yoko Ota, Chia-Yu Chen, Po-Nung Lee. The Chaochou active fault in southern Taiwan: Characteristics and geomorphological significance as a reverse fault. *Journal of Structural Geology*, 185 (2024) 105191.

報告者：譚寧

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報告日期：2024/11/15

摘要

位於台灣南部的潮州斷層長期以來被認為是一條活斷層，但其確切位置仍不確定。在本研究中聚焦於潮州斷層的中段，該處保存了變形的河階地形。首先，我們使用高解析度的航空照片來觀察並繪製這些河階及其周邊地區的地圖，接著進行了詳細的野外調查，包括利用 RTK-GPS 測量儀獲取變形河階的高解析度地形剖面，以及採集 OSL 樣本以確定河階的年代。一系列活斷層被統稱為潮州活斷層帶，其中包括斷層 A (FA)、斷層 B (FB) 和斷層 Bb (FBb)。這些斷層帶的特徵包括面向山脈的崖線、前緣彎曲崖線，以及由 FA、FB 和 FBb 分別造成的間斷坡面。FA 的多次活動記錄在從年輕到年老河階間逐漸增高的斷崖高度中。考慮到在 T1 觀察到的最高斷崖高度為 65.9 ± 6 米，其 OSL 年齡為 35.3 ± 4.3 千年，FA 的長期斷層滑移速率約為每年 2 毫米。

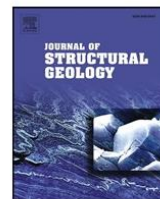
關鍵字：地貌、變形、生震構造、活動斷層、潮州、台灣。



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Journal of Structural Geology

journal homepage: www.elsevier.com/locate/jsg



The Chaochou active fault in southern Taiwan: Characteristics and geomorphological significance as a reverse fault

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ARTICLE INFO

Keywords:

Geomorphic
Deformation
Seismogenic structures
Active fault
Chaochou
Taiwan

ABSTRACT

The Chaochou Fault in southern Taiwan has long been recognized as an active fault, but its exact location is still uncertain. In this study, we focused on the middle part of the Chaochou Fault, where a flight of fluvial terraces was deformed and preserved. High-resolution aerial photos were first used to observe and map these terraces and their vicinity, followed by comprehensive field investigations including RTK-GPS surveys for high-resolution topographic profiles of the deformed terraces and OSL sample collections for obtaining the ages of the terraces. A series of active faults, consisting of Fault A ("FA"), Fault B ("FB"), and Fault Bb ("FBb"), are collectively named the Chaochou Active Fault Zone. The fault zone is recognized and characterized by range-facing scarps, frontal flexural scarps, and discontinuous slopes deformed by FA, FB, and FBb, respectively. The repeated activities of FA were recorded by the incremental fault scarp heights from young to old terraces. Considering the highest fault scarp height of 65.9 ± 6 m observed in T1 and its OSL age of 35.3 ± 4.3 ka, the long-term fault slip rate of FA is about 2 mm/yr.