

台灣北部漸新世-中新世裂谷轉後張裂期過程中 從源到匯演化：碎屑鋯石的初步分析

Source to Sink Evolution During the Oligocene-Miocene Rift-drift Transition in Northern Taiwan: A Preliminary Detrital Zircon Analysis

國立台灣大學地質科學系

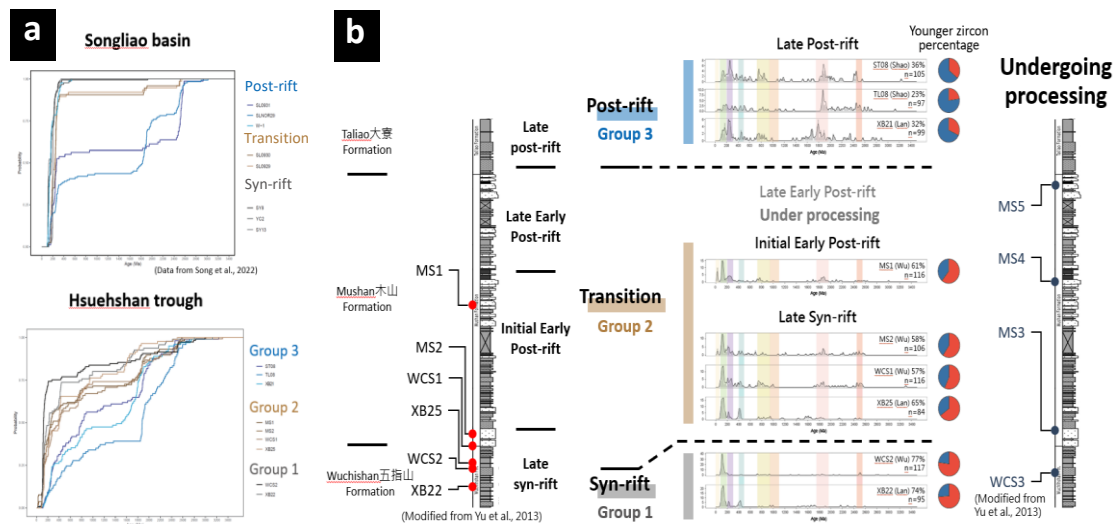
學生：陳俊祺

指導教授：李通藝博士

摘要

台灣北部一系列的古近紀至中新世露頭，記錄了發育於被動大陸邊緣的半地塹盆地—雪山槽，地層紀錄顯示雪山槽古近紀的地層被侷限在此盆地當中，屬於同張裂時期；中新世的地層則是覆蓋在整個盆地與兩邊的高區上，屬於後張裂時期。位於基隆的外木山剖面，完整保存雪山槽從同張裂轉變至後張裂時期的過程。然而，此盆地的演化卻未被前人利用源到匯研究納入討論；因此，本研究將使用具有抗機械性破壞、抗風化能力良好且耐高溫的重礦物—鋯石，作為探討晚漸新世五指山層至早中新世石底層的沉積物源演化與雪山槽演化過程關聯性的工具。

透過結合前人的樣本資料，本研究發現透過碎屑鋯石年代頻譜圖與年代累積曲線能將雪山槽區分出三個演化階段，分別為同張裂、過渡以及後張裂時期；同張裂時期的年代頻譜較為單調，當中以年輕鋯石為主(≤ 500 Ma)；過渡時期的頻



本研究成果圖。(a)碎屑鋯石年代累積曲線，松遼盆地(內陸盆地)與雪山槽的曲線皆可區分出同張裂、過渡與後張裂三個階段。資料取自 Lan et al.(2016), Song et al. (2022), Shao et al. (2010), and Wu (unpublished)。(b)碎屑鋯石年代頻譜圖隨著盆地的演化呈現越來越複雜，且年輕鋯石(≤ 500 Ma)比例也越來越少，指示流域系統隨盆地演化而變廣，提供多元的沉積物源；而透過碎屑鋯石年代頻譜區分出的盆地同張裂與過渡階段的界線較 Yu et al. (2013)略早。圖片修改自 Yu et al. (2013)。

譜顯示有較老的鋯石出現，大約佔整體鋯石數量的 40%；在後張裂時期的頻譜變得十分複雜，代表流域系統因盆地的發育而逐漸變廣。此研究結果大致與前人研究相符，但同張裂與過渡階段的界線與前人研究略有出入，顯示碎屑鋯石不僅能指示盆地的演化過程，還能夠提供新的角度觀察盆地的演化；且在被動大陸邊緣的盆地與內陸盆地皆可觀察到此變化。未來將利用已經在處理的四個樣本進行碎屑鋯石定年，以提供更加詳細的雪山槽演化歷史。

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