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# Structure of the Hsüehshan Range along the Tachiahsi and Wuhsi river valleys, Taiwan

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The Hsüehshan Range of Taiwan represents an inverted rift basin that had developed on the continental margin of southeast Eurasia during the Eocene and Oligocene. The mountain range has been forming within the developing Taiwan arc-continent collision orogen since the Late Neogene, when the Luzon arc began to collide with the margin of Eurasia. The Hsüehshan Range is composed predominantly of shallow water shale and thick-bedded sandstone of the Paileng Formation, with lesser slate and thin-bedded siltstone of the Chiayang Formation outcropping along its eastern flank. Rocks in the Hsüehshan Range have been folded, imbricated, and thrust westward over Miocene rocks of the Eurasian passive continental margin along the Chuchih Fault. In the east, it is bound by the Lishan Fault. Along the Tachiahsi River and Wuhsi River valleys, the Chuchih Fault is a west-verging thrust with pronounced hanging-wall and footwall folds. Folds within the Hsüehahsn Range are tight, west-verging, and plunge moderately to the southeast. Widespread striae on bedding surfaces suggests that bedding-parallel slip was an important deformation mechanism. Boudinage of the thick sandstone beds is common, while the interbedded shales display strong deformation, indicative of strain partitioning into the less competent lithology. Seismicity suggests that the entire crust of the Hsüehshan Range is involved in the deformation, and our preliminary cross sections suggest that there is a significant uplift of the Mesozoic basement across the area.