

**Title :** Classification and Chronological Analysis of Alluvial Fans on the Western Margin of the Pai Basin, Mae Hong Son Province, Based on Geomorphic Indices and Field Observation

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## ABSTRACT

This study aims to classify and analyze the geomorphic evolution of alluvial fans on the western margin of the Pai Basin, Mae Hong Son Province. By applying ten quantitative geomorphic indices through a Geographic Information System (GIS), the study identifies two primary alluvial fan units with distinct physical characteristics: Fan 1, which exhibits a radial shape, and Fan 2, which displays a pie-shaped morphology. The relative age analysis indicates that Fan 1 is geomorphically older than Fan 2. Key supporting evidence includes a Hypsometric Integral (HI) value of 0.39 and a mean of the Relative Elevation Model (REM) of 562.97 meters. Both of which are significantly lower than those of Fan 2. These values reflect an "old stage" in the erosion cycle, where original sediments have been largely denuded, leaving a highly rugged, dissected surface. In contrast, Fan 2 is classified as the "mature stage," characterized by its ability to retain a thicker, denser sediment mass. However, the area also exhibits evidence of modern deep incision, resulting from geomorphic rejuvenation driven by the structural influence of active faults in the region.

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