

Syn-Kinematic Sedimentation at a Releasing Splay in the Northern Minwun Ranges, Sagaing Fault zone, Myanmar: Significance for Fault Timing and Displacement

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Abstract

A syn-kinematic sedimentary section directly related to displacement on the Sagaing Fault has been identified in the northern Minwun Ranges. The northern part of the western strand of the Sagaing Fault has a releasing splay geometry that set up a syn-kinematic oblique- extensional basin in its hangingwall, here called the North Minwun Basin. A series of thick ridges of probably alluvial fan and fluvial sandstones dipping between 20 and 70 degrees to the north, and younging northwards comprise the basin fill over a distance of 40 km. Total stratigraphic thickness (not vertical thickness) is estimated at 25 km. The basin in terms of depositional geometries, large displacements, and large stratigraphic thickness and appearance on satellite images has parallels with the extensional Hornelen Basin, Norway and the strike-slip Ridge Basin, California. Minimum likely displacement on the fault strand is 40 km, and may possibly be in excess of 100 km. The remote and inaccessible basin has yet to be properly dated, likely ages range between Eocene and Miocene. When dated, the basin will provide an important constraint on the timing of deformation. The potential for this basin to constrain the timing and displacement on part of the Sagaing Fault has not been previously recognized.