

Structural geometry, evolution and relationships between strike-slip faults, metamorphic core complexes and rift basins in central Thailand

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The Tertiary in Thailand is a period strongly affected by continental collisions, tectonic escape of continental blocks and extensional tectonics, which ultimately link back to the formation of the Himalayas. In NW Thailand metamorphic core complexes, major strike-slip faults and rift basins are contemporaneous. However structurally it is presently unclear how they relate to each other.

Mapped core complexes exist west of Chiang Mai, their southerly extent will be investigated, along with the evolution of the Mae Ping strike-slip fault zone. Among other techniques apatite fission track dating will establish the uplift history of the area. Seismic interpretation of the Phitsanulok basin, focusing on timing and orientation of structural features especially inversion, will be integrated with the field data to determine the links between core complexes, strike-slip motion, rift basin development and paleostress evolution.

On a basin scale understanding the magnitude and timing of uplift is useful for reconstructing sediment source areas and drainage patterns during the syn-rift stage. Constraining the timing of inversion is important for trap development and for identifying the location and timing of fault reactivation, which can lead to lateral seal destruction.