



What controls early Miocene relief production of southeastern Tibet?

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When and how the high-elevation, low-relief relict surface originated in the SE Tibet remain debated. Tectono-geomorphologic analyses reveal that a NE-SW-strike topographic step is extended from the Longmen Shan to Jianchuan Basin, coincident with the trace of the Yalong-Yulong and Jinghe-Qinghe thrust system. This coincidence seems to tell the casual links between the relief generation of SE Tibet and thrusting. We conducted comprehensive work of geological mapping, structural analysis, sedimentology and apatite fission-track dating in the Tertiary Jianchuan Basin. Structural analysis examined a newly-defined thrust-Lijiang fault, viewed as the southeastward extending of the Yalong-Yulong thrust. Apatite fission-track data reveals rapid exhumation of the Jianchuan Basin at ~ 20 -18 Ma in the hanging wall of the Lijiang thrust consistent with regional absence of Early Miocene sediments, indicating Early Miocene uplift of the Jianchuan Basin. We proposed that this event was likely related to the thrusting of the Yulong-Lijiang fault, broadly coeval with EW-oriented compression prevailed along the relief margins of the southeastern Tibet. Therefore, our new data supports that the relief production of the SE Tibet was controlled by thrusting, which predicts a revised block extrusion model.