

SCG087-P04

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Tectonic deformation feature around eastern Tibetan syntaxes inferred from paleomagnetic and GPS data

Yo-ichiro Otofujii^{1*}, Masahiko YOKOYAMA¹, Kazuya KITADA², Haider ZAMAN¹

¹Kobe University, ²JAMSTEC

A northward indentation of the Indian Continent has brought about significant tectonic deformation in to East Asia. The present-day deformational features around East Asia is viewed by a snapshot available through GPS data, which clearly shows clockwise rotation of an area around eastern Himalayan Syntaxes, at 27.5N, 95.5E. A long term rotational/deformational activities cumulated during the last 50 million years have also been saved by paleomagnetic record available from the area. We have compiled a list of paleomagnetic data available from 119 localities distributed around eastern Himalayan syntaxes and depicted a rotation aspect with respect to Eurasian continent. This record delineates that an area affected by clockwise rotation extends from northwestern part of the Indochina Peninsula to southern tip of the Chuan Dian Fragment. An area that have experienced spectacular amount of rotational displacement after an initial phase of collision is currently located at 23.5N, 101E, which is about 670 km southeast of an area currently undergoing a significant rotational motion. We attribute this significant shift of rotational zone as a visual evidence of southeastward extrusion of the tectonic terranes (within the framework of Asian Continent) as a result of ongoing indentation of India in to Asia. Based on the available paleolatitudinal and GPS data, we conclude that following an initial India-Asia contact the zone of significant rotation has been squeezed out from a paleoposition of 30N, 95.5E to the present day latitude of 23.5N, 101E, indicating about 1000 km displacement during the last 50 million years.