

A study paleomagnetism of Jurassic-Cretaceous redbeds from Ratchburi, Thailand

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Differential tectonic rotation occurred in Southeast Asia later than collision event of India to Asia. Jurassic to Cretaceous paleomagnetic data reveal that the Shan-Thai and Indochina blocks experienced clockwise tectonic rotation, whereas the Sundaland experienced counter-clockwise tectonic rotation. We focus our paleomagnetic study on finding tectonic boundary between areas experienced differential rotation within Indochina Peninsula. Cretaceous red sandstones are collected at 21 sites from Ratchburi (13.5°N, 99.5°E) in Thailand. Stepwise thermal treatment of most samples revealed the presence of characteristic remanent magnetization, which is generally unblocked by 680°C. Pre-folding origin is confirmed by positive fold test. The 100% tilt-corrected mean direction (Dec=350°, Inc =27.2°, k=30.9, a95 = 7.9°, N=20) is considered to be acquired during the time of deposition in the Early Cretaceous. This declination is similar to counter-clockwise deflected one observed in the Trang Syncline (7.6° N, 99.6°E), the Peninsular Thailand (D=342.8°, I=22.3°, a95=12.7°, N=13). Compared with the Jurassic-Cretaceous expected paleomagnetic direction deduced from APWP of Eurasia, declination at Ratchburi deflects counter-clockwise by about 25.0° from it, suggesting that Ratchaburi area was subjected to counter-clockwise tectonic rotation by about 25.0°. These results indicate that this area belongs to counter-clockwise rotated Sundaland.