

## Tectonic deformation of the Indochina Peninsula recorded in the Mesozoic paleomagnetic results

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Late Jurassic to Middle Cretaceous red sandstones were sampled at three localities of the Shan-Thai and Indochina blocks to describe features of the tectonic deformation in the Indochina Peninsula. Most of the samples gave a characteristic remanent magnetization with unblocking temperatures around 680C. The characteristic remanent magnetizations (considered as a primary) obtained from the Phong Saly and Borikhanxay localities revealed Late Jurassic-Early Cretaceous directions of Dec/Inc = 29.8/32.7 (Ks=14.5, a95 = 9.1, N=22) and Dec/Inc = 41.8/46.6(Ks=19.7, a95 = 8.0, N=18), respectively. In addition, the Mid-Cretaceous characteristic magnetization from the Muang Phin locality, which we consider as a syn-folding in origin, gave a mean direction of Dec/Inc = 30.8/39.9, K=103.8, a95 = 3.0, N = 23. Reliable Late Jurassic to Mid Cretaceous paleomagnetic directions obtained from three localities are incorporated into a paleomagnetic database of the Shan-Thai and Indochina blocks. Based on these recalculations, tectonic deformation of the Shan-Thai and Indochina blocks is summarized as following; (1) Both the Shan-Thai and Indochina blocks experienced a clockwise rotation of more than 15 degrees as a composite tectonic terrane in the early stage of India-Asia collision, (2) following this, the Indochina Block behaved as a rigid tectonic unit, whereas the Shan-Thai Block underwent an internal tectonic deformation, and (3) apparently no tectonic rotation is observed at those five localities, which are located in a narrow zone of the Ailaoshan- Red river fault system. Comparison of the paleomagnetic results with seismic tomographic images suggests that strength of continental lithosphere beneath these blocks played an important role in the process of deformation rather than any other tectonic regime. In contrast to Shan-Thai Block, an existence of continental roots under the Indochina Block characterizes that no internal deformation has occurred in this block.