

Paleomagnetic study of Neogene sediments in strike-slip basins along the Tanakura Fault

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The Tanakura Fault, one of the major tectonic line in Japan, is developed from the Tanagura Town, Fukushima Pref. to the Hitachiohta City, Ibaraki Pref., with a NNW-SSE trending direction. They consist of the Eastern Marginal Fault, the Western Marginal Fault and a shear zone between the faults. The movement of the Tanakura Fault is thought to be related to the Japan Sea opening during the Early to Middle Miocene (e.g., Jolivet and Tamaki, 1992). Geologic studies have revealed that strike-slip basins were developed due to a left lateral movement of the Tanakura Fault (e.g. Amano, 1991). This study aims to refine the chronostratigraphy of geologic sequences of strike-slip basins developed along the Tanakuura Fault, and to reconstruct a tectonic history of the basin based on paleomagnetic analyses.

Samples for paleomagnetic analyses were collected from the Yajika Rhyorite, Kitatage Formation, Kitatage Formation, Osawaguchi Tuff Member and the Nawashiroda Formation in the Yamatsuri, Western Daigo, Eastern Daigo and Yamagata Basin.

As the results of paleomagnetic analyses, the Kitatage Formation, Osawaguchi Tuff Member, Asakawa Formation and Nantaisan Volcanic Breccia exhibit non-rotating reversed polarity supposed to be correlated to the Chron C5Br (ca. 16.04-15.2 Ma). On the other hand, the Nawashiroda Formation exhibits reversed and normal polarities correlated to the Chrons C5Br, C5Bn, C5ADr (ca.15.2~14.6 Ma) , which associated with a clockwise rotation ca. 20°, suggesting that a counterclockwise rotation ca. -20° is needed to be at this area before deposition of the Nawashiroda Formation.

Keywords: The Tanakura Fault, strike-slip basin, Japan Sea opening, Middle Miocene, paleomagnetic study