

西南日本の時計回り回転運動のタイミング：中新世堆積岩から得られた証拠
Timing of the clockwise rotation of Southwest Japan: paleomagnetic evidence from
Miocene sedimentary rocks

星 博幸^{1*}; 加藤 大貴¹; 安藤 慶和¹; 中島 和夫²
HOSHI, Hiroyuki^{1*}; KATO, Daiki¹; ANDO, Yoshikazu¹; NAKASHIMA, Kazuo²

¹ 愛知教育大学, ² 山形大学

¹Aichi University of Education, ²Yamagata University

The clockwise rotation of Southwest Japan is a textbook example of near-pivot arc rotation associated with back-arc opening. However, its timing is still a matter of debate; earlier studies suggested rapid rotation at about 15 Ma, but this does not seem to be supported by recent paleomagnetic data. To address this problem, we have carried out a paleomagnetic study of biostratigraphically well dated (15.8-15.7 Ma) Miocene sedimentary rocks in the eastern part of Southwest Japan. A total of 288 rock samples of siltstone and felsic fine tuff were collected from a ~90 m sedimentary sequence. Of these, 142 yielded reverse polarity characteristic remanence directions, resulting in a formation-mean direction that can be used for tectonic discussion. We conclude that about 80% of the entire ~45° rotation occurred in a period between 17.5 Ma and 15.8 Ma at a rotation rate of ~21°/Myr, and the remaining ~20% by 15 Ma. This clockwise rotation happened in the latest stage of the late Paleogene to early Neogene opening of the Japan Sea.

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