

Reconstruction of the lower Olduvai geomagnetic polarity transition in Chikura Group distributed in the Boso Peninsula

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The Chikura group, covering the Upper Pliocene –Lower Pleistocene, is distributed in the Southernmost part of the Boso Peninsula, Chiba Prefecture, Japan. The group is thought to be a marine deposit filled on the landward slope basin facing to the paleo-Sagami trough. Okada *et al.* (2012) constructed a paleomagnetic and oxygen isotopic stratigraphies, covering between about 2.3 and 3.5 Ma (MIS G16 to 93), for the Mera and the Minamiasai Formations consisting of the Chikura Group. The tephra bed, seen in the top horizon of the section studied by Okada *et al.*, (2012), can be correlated to a tephra bed found at the bottom horizon of our study section where the Hata Formation laying on and partly interfingered with the Minamiasai Formation. This observation indicates that our study section is suitable for reconstruction of stratigraphic records, including the geomagnetic field variation, for the period younger than 2.3 Ma. For rock-magnetic and paleomagnetic measurements, we collected several mini-cores using a portable engine drill at every 1 - 4 m stratigraphic interval, and collected a mini-core at every 10 cm interval around reversal boundaries associated with the Réunion Subchronozone and Olduvai Subchronozone.

The demagnetization methods evaluated in this study are the alternating field demagnetization (AFD) with 5 mT increments up to 80 mT, the thermal demagnetization (ThD) with 50 °C increments up to 600 °C, a hybrid method consisting of ThD at 250 °C and the AFD sequence. Among those methods, only the Hybrid method provided data passing the reversal test. So, we selected the Hybrid method as to provide paleomagnetic data from the study section.

We detected the Réunion Subchronozone and the lower Olduvai polarity transition zone from horizons of 4.7 m and 1.6 m thickness respectively. We obtained an oxygen isotope stratigraphy from the lower sequence covering the Réunion Subchronozone. As the result, the lower and upper boundaries of the Réunion Subchronozone are correlated to MIS 81 and 80 respectively, which are consistent with the result from IODP Site U1308 (Channell *et al.*, 2016).

Reference Okada *et al.*, 2012, Jour. Geol. Soc. Japan, 118, 97–108. Channell *et al.*, 2016, Quat. Sci. Rev. 131, 1-19.

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