

## Early Miocene paleomagnetic data of core samples obtained from the Mizunami area, central Japan

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Mizunami area within the easternmost portion of southwest Japan is underlain by the Mizunami Group, fluvial to shallow marine clastic rocks assigned to the early to middle Miocene (Itoigawa, 1993). It is a part of inland sedimentary basins developed as a result of the rapid rifting event of southwest Japan. Hayashida (1986) executed paleomagnetic study in this area, and found that the lower to middle part of the sequence (Akeyo Formation) was characterized by significantly easterly deflection in remanent magnetization, whereas the upper part (Oidawara Formation) had smaller easterly deflections. Because the rifting of southwest Japan had been achieved by a fan-shape opening of the Japan Sea (Otofuji et al., 1985), the temporal change in paleomagnetic declination was interpreted as clockwise rotation of the rifted continental sliver. Thus the Miocene strata in the Mizunami area record rotation process of southwest Japan. In this study, we utilize fresh core samples obtained from an inclined borehole to a depth of 190 m from the surface. Miocene series along the borehole comprise the lower to middle part of the Mizunami Group, which is divided into the Toki Lignite-Bearing Formation and the Akeyo Formation in ascending order. Although the drilling was executed by conventional method without determination of orientation, core samples were successfully oriented on the basis of matching between borehole TV images and sedimentary structure on the core surface in laboratory. Progressive demagnetization experiments by thermal and alternating field methods revealed that most of the samples preserve stable remanent magnetization with reversed polarity. Tilt-corrected paleomagnetic directions are indicative of clockwise rotation since the early Miocene. Together with the previous data, the present result provides a data-set of pre-rifting paleomagnetic directions of southwest Japan. Based on comparison of contemporaneous paleomagnetic data reported from southwest Japan, we evaluate deformation in the eastern part of the island arc brought about by collision of the Izu-Bonin arc succeeding to the Japan Sea opening (Itoh, 1988). As the study area is located around the junction of differentially rotated blocks (Hayashida, 1994), geologic structure of the lower Miocene is a clue to determine deformation mode of southwest Japan during the arc-arc collision event.

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