

## Paleomagnetism of the Znp-Ohta tephra in eastern Honshu: relative tectonic rotations at local and regional scales?

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We present paleomagnetic data suggesting relative tectonic rotations in eastern Honshu since 3.9 Ma. Samples were collected from a widespread ash bed, called the Znp-Ohta tephra, at three localities. One is the Tomioka locality located to the east of the Abukuma Mountains, where the ash bed (local name = SF4.5 tephra) was sampled at three sites. The other two are the Miyobara and Kohsaka localities on the Boso Peninsula, where the ash bed (local name = An85 tephra) was sampled at three sites at each locality. Stepwise demagnetization was performed on all specimens, and the principal component analysis was applied to the demagnetization data to extract characteristic remanent magnetization (ChRM) components. At Tomioka, site-mean ChRM directions were determined at all sites. They are tightly clustered after tilt correction and have a southerly direction of reverse polarity. Interestingly, the direction is deflected significantly counterclockwise with respect to the direction of the correlative tephra at Chita in central Honshu (Hoshi & Deguchi, 2013). At Miyobara and Kohsaka, the locality-mean ChRM directions are significantly different to each other. The paleodeclination of Miyobara is similar to that of Tomioka, and the paleodeclination of Kohsaka is almost identical to that of Chita. The difference in paleodeclination between Miyobara and Kohsaka seems to be related to the difference in the general geological trend of Neogene strata on the Boso Peninsula, suggesting relative rotation on the peninsula. Our results imply that in eastern Honshu, relative rotations have taken place at local and regional scales since the Pliocene.

Keywords: eastern Honshu, paleomagnetism, Pliocene, relative rotation, tectonics, Znp-Ohta tephra