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Paleomagnetic results from the Himaka Formation of the Morozaki Group (Early Miocene sediments), central Honshu

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We present new paleomagnetic results from the sedimentary rocks of the lowest formation (Himaka Formation) of the Lower Miocene Morozaki Group. The paleomagnetism of the upper formations of the group has been previously reported, but there have been no published data for the Himaka. Oriented cores were collected from 16 stratigraphic sites (horizons) from the ca. 90 m sequence on the Saku-shima (Saku Island), 4 sites from the ca. 110 m sequence on the Himaka-jima (Himaka Island), and 2 sites from the ca. 60 m sequence on the southeastern tip of the Chita Peninsula. The sampled sites consist mostly of felsic fine tuff layers, with minor siltstone units. Cylindrical specimens were subjected to stepwise alternating-field or thermal demagnetization in order to extract characteristic remanent magnetization (ChRM) components. With the exception of a few sites where the remanent magnetization has been seriously affected by a normal-polarity secondary overprint, the Himaka Formation sites have reverse-polarity ChRM directions. Taking the magnetostratigraphy of the upper formations of the Morozaki Group into consideration, the Himaka Formation is correlative with Chronozone C5Dr (18.056-17.533 Ma). The site-mean ChRM directions are marked by a paleo-declination that is consistently southwest (reverse polarity). This is compatible with site-mean directions of the upper formations and can be explained by assuming a clockwise tectonic rotation. The paleo-declination of the Himaka Formation is deflected 10-20^o counterclockwise relative to the strike of the nearby Median Tectonic Line (MTL). This is also the case for the Shitara area (ca. 70 km to the northeast) and the Chichibu area (Kanto Mountains), indicating that the MTL had the same strike direction in these three areas in the late Early Miocene.

Keywords: paleomagnetism, Himaka Formation, Morozaki Group, Median Tectonic Line, tectonic rotation, Early Miocene