

Environmental magnetic study of the late Pleistocene lacustrine deposits (the Takano Formation) in Nagano City, central Japan

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The Takano Formation is a lacustrine deposit of late Pleistocene in Nagano City, central Japan. The sediments are of the Takano Formation to provide a high resolution paleoclimate record in inland area, because there are several widespread tephra layers of marine isotope stage 6 to 4 in age. In 2004, core sample of 53.88m in total were obtained for high-resolution study. In order to examine environmental magnetic record and paleomagnetic signals of the Takano Formation, I measured magnetic susceptibility and natural remanent magnetization (NRM) of u-channel samples from these core. The magnetic susceptibility shows inverse correlation with total organic carbon (TOC) and total nitrogen (TN). The periods of higher magnetic susceptibility correspond to glacial, and those of lower susceptibility to the interglacial. This result suggests that magnetic susceptibility variations is controlled by variations of flux of biogenic components. It is also suggested that decomposition of organics occurs in oxic condition below 46.00m.

The NRM direction, example with alternating field demagnetization at 2.5, 5, 10mT, show occurrence of reversed magnetic polarity over two cores at the depth from 21.34m to 22.10m. This interval may be correlated with a geomagnetic polarity reported at Thoubeny by 95ka. However, reversed polarity data correlative to the Blake excursion (115-122ka) was not observed in the Takano Formation.