

Magnetic properties of sediment taken from Lake Nakaumi

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Lake Nakaumi is one of typical brackish water lakes of Japan. Its detailed environmental changes has been clarified recently. We investigated magnetic characters of the sediment for the first time. Two sediment cores (2000X and N1) were taken, and 153 cube samples were extracted from 2000X and 171 cube samples from N1. Measurements of NRM and stepwise AF demagnetization up to 50mT for all cube samples were performed with SQUID magnetometer at National Institute of Polar Research. The stepwise AF demagnetization shows that all samples contained a low coercive force component which vanishes by AF demagnetization up to 50mT in core N1. About 40 samples contained high coercive force components which are unchanging by AF demagnetization up to 50mT and whose directions are different from that of a low coercive force component in core N1. Stepwise thermal demagnetization of composite IRM shows that magnetite and, greigite and/or pyrrhotite are contained in all samples and that hematite is contained in some samples in core N1. Scatters of declination and inclination were reduced by estimating the magnetic remanent direction of the low coercive force component by principal component analysis. Some anomalous inclinations and declinations are correlated with peaks of shell content.