

Magnetic properties of Images core MD01-2421 recovered off Kashima: Magnetic anisotropy and deformation of piston core sediments

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During Images VII cruise in 2001, a giant piston core MD01-2421 of 45.82 m long was recovered from a water depth of 2224 m off Kashima in the western North Pacific. The core sediment consists mainly of dark olive gray-colored homogenous silty clay, intercalating several volcanic ash layers. The recovered section is correlated to oxygen isotope stage 6 to the present. In attempting to obtain a high-resolution record of paleointensity and geomagnetic polarity excursions in the Brunhes Chron, we are investigating magnetic properties of u-channel samples from Core MD01-2421. Along with pass-through measurements of the u-channels, we also measured magnetic anisotropy of cubic samples in order to examine sedimentary fabric of magnetic minerals. Anisotropy of magnetic susceptibility (AMS) measured on a Kappabridge (AGICO KLY-3S). At the interval between 7 and 40 m, oblate AMS ellipsoids are dominantly observed, of which maximum and intermediate axes are oriented around horizontal directions. In the topmost 7 m, however, AMS ellipsoids are characterized by a prolate shape with vertically oriented maximum axis. This result suggests that the sediment of this interval was vertically elongated probably during the coring process.