

## Rock magnetic study of a deep-sea piston core sediments from the eastern equatorial Pacific

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A piston core sample recovered at site HY-04 (N4.0, 95.1W; water depth = 3563 m) during the KH03-1 cruise was analyzed to elucidate paleoenvironmental change in the eastern equatorial Pacific. U-channel samples of the core HY-04PC (length of undisturbed upper part is 1230 cm) were at first pass-through measured with a cryogenic magnetometer at the Center for Advanced Marine Core Research of Kochi University. After stepwise AF demagnetization process, remanent magnetization of the core was found to be stable and thus safely correlated with the Brunhes Normal Chron.

Discrete cubic samples (580 in numbers) were re-sampled from the U-channels after the pass-through measurements. Low-field susceptibility ( $k$ ), anhysteretic remanent magnetization (ARM), and isothermal remanent magnetization (IRM) at 0.1 T, 0.3T and 2.5T (SIRM) were measured at Okayama University of Science. After the measurements, these discrete samples were freeze-dried to give a dry-based weight and also water content ( $w$ ) of each sample.

Water content,  $k$ , ARM, and SIRM show synchronous changes with variable wavelength of about 100 to 200 cm throughout the core as shown in the figure below. It should be noted that the sample of high  $w$  (more than 200%) shows high value of  $k$ , ARM and SIRM, which implies higher concentration of magnetic minerals in those samples. The sediment of high  $w$  is generally dark-colored and shows low bulk density. These facts suggest that the dark-colored sediments could not be a terrigenous origin, although showing obvious magnetic enhancement. In the lower half of the core,  $S_{-0.3T}$  shows significant low values (as low as 0.85) at several horizons where correspond to the light-colored sediment. Such low value of  $S_{-0.3T}$  sounds unusual in the deep-sea sediments. We will further discuss on these rather intense variations of various rock magnetic parameters found in the core sediments.

