

## Results of Onboard Measurement on Core Samples of the Drilling Test During CK06-06 D/V Chikyu Shakedown Cruise

# Kan Aoike[1]; Daniel Curewitz[2]; Takamitsu Sugihara[3]; Philippe Gaillot[4]; Hideki Masago[4]; MOE Kyaw Thu[5]; Kan Aoike CK06-06 D/V Chikyu Onboard Laboratory Members[6]

[1] CDEX / JAMSTEC; [2] ORI; [3] CDEX, JAMSTEC; [4] JAMSTEC/CDEX; [5] JAMSTEC, CDEX; [6] -

The D/V Chikyu Shakedown Cruise, CK06-06, was carried out off the Shimokita area from 6 August to 26 October 2006. The coring operation test was conducted by riserless drilling with the HPCS (Hydraulic Piston Coring System) and ESCS (Extended Shoe Coring System) at a pilot hole, C9001C, 1180 m in water depth, penetrating to 365 mbsf and recovering 40 cores (386 m in total length). The riser drilling test at the main hole, C9001D, finished at a depth of 647 mbsf; cuttings samples were obtained from 25 intervals between 527 - 647 mbsf. In the laboratory, we conducted a wide array of experiments related to processing, curating, measuring cores, as well as discrete sample data collection and processing, by using real cores and cuttings samples in order to demonstrate the ability to meet IODP operation standards. In order to assist in evaluation and critical observation of laboratory operations, 27 technical/scientific advisors were invited onboard in relays from Japanese and foreign geological communities.

These preliminary onboard measurement results provide several interesting scientific findings. Recovered cores, as well as cuttings samples, are chiefly composed of diatomaceous silty clay, with common intercalations of tephra and sand layers as subordinate components in the upper and lowermost parts. An age model was created based on onboard determinations of microbiostratigraphy, tephrochronology and magnetostratigraphy. According to the model, sedimentation rates are estimated at 54 - 95 cm/ka and the age for the bottom of Hole C9001C is presumed to be about 650 ka. The lithofacies of the lower part are almost lacking in tephra and sand layers, suggesting that volcanic activity was relatively quiescent in the hinterland during this period, presumably 400 - 600 ka. The main silty clay can be divided into two types, dependent on abundances of biogenic grains represented by diatoms and terrigenous clastic grains; these two clays appear interchangeably and periodically, probably reflecting climate change influenced by the Milankovich Cycle.