

Paleomagnetic and rockmagnetic record from northern end of Okinawa Trough for the past 20 kyrs

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Four core samples were collected during KY07-04 cruise in the Danjo Basin, northern end of Okinawa Trough from 24th Feb. to 1st Mar., 2007. The aim of the cruise was to confirm the possible existence of geomagnetic excursions (around 6ka and 14ka) recognized in the previous core MD982195 during IMAGES IV cruise in 1998. In the presentation, we report paleomagnetic and rockmagnetic results from core PC1, which was collected at the same site as MD982195. PC1 was collected at Lat. of 31deg38.3540'N and Lon. of 128deg56.6437'E with a water depth of 758 m, which is mainly composed of silt to clay. Preliminary age model based on K-Ah tephra (7300yr BP; 365-489 cm) and correlation of color data of the core with that of MD982195 show that the age at the core bottom may be around 21 ka. Age model based on ^{14}C ages on planktonic foraminifera will be constructed. Natural remanent magnetization was measured at 17 steps with AF up to 80mT and characteristic component was calculated by fitting data points between 10 and 30 mT. Relative paleointensity was estimated by Pseudo-Thellier method based on the ARM acquisition and demagnetization experiments and MDF_{ARM} was calculated. Paleomagnetic inclination and relative paleointensity does not show geomagnetic excursions recognized in MD982195, however, relative paleointensity for the past 20 kyr was obtained. Paleomagnetic inclination above K-Ah tephra layer show higher amplitude variation than that below the tephra layer. Comparison with paleosecular variation data by Hayashida et al. (2007) show that variation in PC1 below K-Ah tephra is smaller. This may be caused by episodic change in the sediment environment to anoxic condition triggered by a rapid deposition of about 1 m thick tephra layer. Relative paleointensity show decreases at 7 ka and 13 ka, which may correspond to decreases at 7 ka and 12 ka in Hayashida et al. (2007). Also, records from southern part of Okinawa Trough at ODP Hole 1202B show a decrease at 7 ka (Richter et al., 2006). Further comparison with other paleomagnetic records from Japan and other parts of the world will be shown in the presentation.