**L063-002** Room: C402 Time: May 29 13:46-13:59

# Paleomagentic and oxygen isotope stratigraphies of sediment cores from the Bearing Sea and the subarctic Pacific

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We have collected 6 piston cores during the R/V Hakuho-maru KH99-3 Leg 3 cruise (Seattle-Tokyo, June 25 - August 25 in 1999) of which five from the Bering Sea and one from a crest of the Emperor Seamount chain. In this study, we provide core ages determined by paleointensity records from all the cores and oxygen isotope records from two cores.

The cores were collected from the following four areas in the Bering Sea and a site in the central subarctic Pasific: Umnak Plateau (Umk3A), Gateway region (Gat3A), Bower Ridge (Bow8A, 9A, 12A), Abyssal Basin (AB), and a crest on the Emperor Seamount chain (ES). Lithology of the cores mainly consists of diatoms and clay minerals. ES and Bow8A cores are relatively clay rich include carbonate. Gat3A core is clay rich but partly has diatom rich zones. Other cores are basically diatom rich (Fig.2). Bow12A core contains slumped layers at upper parts of the column of which magnetic susceptibility and dry bulk density are quite low.

Methods:

All measurements were used 2 x 2 cm U-Channels and conducted 2G760R pass through type SQUIDs at AIST (National Institute of Advanced Industrial Science and Technology) and JAMSTEC (Japan Marine Science and Technology Center). All specimens were done stepwize AFD (alternating field demagnetization) up to 60 mT of the NRMs (natural remanent magnetization) and also after ARM (anhysteretic remanent magnetization) acquired at 0.1 mT direct field with 80 mT AF, and IRMs (isothermal remanent magnetization) at 800 mT.

Stable oxygen and carbon isotopes of planktonic foraminifers (left coiling N. Pachyderma) were measured using the Mat250 mass spectrometer at Shizuoka University. Foraminiferal tests used for measurements were picked from specimens sliced with 2 cm thickness.

Results:

Most of the cores exhibit stable intensities normalized by partial ARMs except Bow8A on which partial NRM/IRM ratios are tied well together. Thus, we chose partial IRMs as a normalizer for the Bow8A core as well as ARMs for the remains. We used normalized NRMs as paleointensities to compare them with standard VADM (virtual axial dipole moment) records of which the short one (Tric et al., 1992) was for less than the last 80 kyr and the Sint800 (Guyodo and Valet, 1999) for longer periods. As the results, we determined core.

Marine isotope stratigraphy was established on the Bow8A and ES cores by using visual correlation with the stacked isotope curve (Martinson et al., 1987). Both ages from paleomagnetic and marine isotope stratigrapies exhibit consistent each other but some intervals are inconsistent. For example, at the core top parts, where a magnetic remanence is not stable yet, we used marine isotope to determine the age. The other hand, at the lower parts, where foraminifers are not abundant enough, we used paleointensies.

As the results, we calculated sedimentation rates and compared the time lines at each core. Sedimentation rates in the eastern Bering Sea (Bow9A, Bow12A, Gat3A, Umk3A) are quite high (10-20 cm/ky), particularly in MIS2. On the other hand, Bow8A shows very low rate (3cm/ky) in spite of the shallowest water depth (882m). Since the rate and lithology of Bow8A are quite similar with ES in the subarctic Pacific, at least the Bow8A site seems to have been deferent environment from the Bering Sea more like one in the north Pacific.

References

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Martinson, D.G., Pisias, N.G., Hays, J.D., Imbrie, J., Moore, T.C., Jr., and Shackleton, N.J., 1987. Age dating and the orbital theory of the ice ages: development of a high-resolution 0 to 300,000-year chronostratigraphy. Quat. Res., 27:1-29.