Stratigraphy of marine core from Antarctic ocean(ross sea)

Yusuke Yagi[1]; Masafumi MURAYAMA[2]; Toshiaki Mishima[3]; Keiji Horikawa[4]; Takuya Sagawa[5]; Kazuto Kodama[6]; Yoshihisa Kato[7]; Masao Minagawa[8]

[1] Kochi Univ.; [2] Marine Core, Kochi Univ.; [3] KURCIS, Kobe Univ.; [4] CAMR; [5] CMCR Kochi Univ.; [6] CAMCore, Kochi Univ; [7] School Mar. Sci. & Tech., Tokai Univ.; [8] GSEES, Hokkaido Univ

Paleoceanographic studies in the southern hemisphere high latitudes are important for understanding the global climate system. These detailed records of the oceanic response to various climate conditions are well-documented in marine sediments. The main goal of this study is to reconstruct an accurate chronostratigraphy and to reveal the paleocenographic and sedimentological changes in this region during Quaternary. A piston core SX-09 (65 10.79S, 174 04.77W, 3336 m) which was recovered from southwestern part of Pacific-Antarctic Ridge, the Ross Sea, Antarctica during the R/V Hakuho-Maru KH02-4 cruise, was composed mainly of foraminifer bearing siliceous clay with ice-rafted debris (IRDs). To date, magnetostratigraphy and benthic foraminifer oxygen isotope were adopted. Remanent magnetization of the U-channel samples was measured with a 2G superconducting rock magnetometer. Stable characteristic remanent magnetization was isolated by subjecting the samples to progressive alternating field demagnezation. By referring the obtained magnetic polarity sequence with the geomagnetic polarity time scale (GPTS) by Cande and Kent (2005), we estimated the age of this core. Epoch boundary placed the Brouhes-Matuyama at 0.78 Ma was existed between 565 to 720 cmbsf. This suggested that the boundary was affected by IRDs distribution and/or by high sedimentation rate. The depth of 720 cmbsf to the bottom (1480 cm) was correlated with reverse of Matuyama Chron (Chrons C1r, 2.58 Ma). Jaramillo Subchron (Chron C1r. 1n, 0.99-1.07 Ma) correlated clearly with the depths of 1012-1076 cmbsf. The average sedimentation rate calculated by the epoch boundary ages was approximately 0.7-1.5 cm/kyr. We will discuss more detail age control combined with d-18O data and the IRDs abundance corresponded to the glacial history in the Antarctic Sea.