

# Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

©2011. Japan Geoscience Union. All Rights Reserved.



MIS027-04

Room:201A

Time:May 22 15:00-15:15

## Environment changes since the Last Glacial time deduced from MD10-3312 core off Joetsu, Japan Sea

Fujio Kumon<sup>1\*</sup>, Manato Kuriyama<sup>2</sup>, Ryo Matsumoto<sup>3</sup>

<sup>1</sup>Faculty of Science, Shinshu University, <sup>2</sup>Faculty of Science, Shinshu University, <sup>3</sup>Earth and Planetary Sci., Tokyo Univ.

Sediment core, MD10-3312 is collected from a small ridge at 1026 m depth off Joetsu, Japan Sea during MD179 cruise, and is as long as 31.14 m, which is composed mostly of silty clay with some marker tephra beds. Based on the relationship between the depth and age of the identified marker tephra beds, the sedimentation rate is 0.25 mm/year and the age of core bottom is calculated as old as 125 ka. Water content of every 1 cm has been measured completely, and TOC and TN have been analyzed for every 2 cm, attending back to 76 ka now.

The TOC amount varies from 0.6 % to 2 %, showing quasi-periodic fluctuations. The TOC profile is very similar to the delta 18O profile of ice core from Greenland. General trend of TOC content is almost same as LR04 curve of marine delta 18O isotope, and small peaks on the TOC profile also well correspond to the GIS 1 to 20 peaks since 76 ka. This fact means that the temperature in the North Atlantic region affected the biological productivity of Japan Sea probably via air temperature controlled by circum-Arctic circulation of atmosphere. This is an excellent record of climate change in a middle latitude area of Far East Asia.

Dark-colored units which alternate with light-colored bioturbated units characterize the sediment of Japan Sea. Two types of dark units were identified. One type is of low TOC contents in MIS 2, the coldest period, and another one is of high TOC contents found in MIS 3 to 5.

MD179/Japan Sea gas hydrate cruise of R/V Marion Dufresne was performed under the financial supports from MH21 project.

Keywords: Environment change, Japan Sea, MD10-3312 core, total organic carbon, MH21, gas hydrate