

## Paleoenvironmental change elucidated from the total organic carbon concentration and stable isotope from Mogami trough

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The temporal changes in total organic carbon (TOC) concentration for cored sediment off Joetsu city, Japan Sea is very similar to the millennial scale climate change at the northern hemisphere (Urabe et al., 2014). Then, we analyzed the TOC, total nitrogen (TN) concentration and these stable isotope ratio  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  values with high temporal resolution for new core RC1408 from Mogami trough, Japan Sea. TOC concentration and  $\delta^{13}\text{C}$  value for RC1408 is high during Holocene, and low in Last glacial maxima (LGM).

The high TOC concentration during middle to late Holocene suggests high biological productivity in the sea surface. The contribution of marine organic matter to TOC was increasing with sea level rising, suggesting the decreasing trend of C/N ratio and increasing trend of  $\delta^{13}\text{C}$  value during 6.0~9.8 ka, and then becoming current oceanological condition at 6.0 ca. In the last deglaciation, the rapid increasing TOC concentration and  $\delta^{13}\text{C}$  value suggest increasing marine biological productivity. In the last glacial maxima, the marine biological productivity was very low and the contribution of terrestrial organic matter increased but the inflow was very little, according to the lowest TOC concentration and  $\delta^{13}\text{C}$  value. This study is a part of a development methane hydrate project, Ministry of Economy, Trade and Industry.

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