

Paleoenvironmental changes since the Last Glacial Maximum based on C, N and S element concentrations around Okinawa

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In order to reconstructing paleoenvironmental changes since the Last Glacial Maximum (LGM), we collected two gravity cores located in the eastern (GH08-2004) and western (GH10-2011) area of Okinawa Island and analyzed total organic carbon (TOC), total nitrogen (TN), total inorganic carbon (TIC) and total sulfur (TS) concentrations and radiolarian assemblages.

Concentrations of TOC and TN of GH08-2004 were relatively high at 25-16 cal kyr and decreased after 16 cal kyr. Values of TOC/TN ration (C/N ratio) at 25-12 cal kyr were 7-8 and higher than those at 12-0 cal kyr. The relationship between TOC and C/N ratio show a good positive correlation and this result suggests that the amount of terrestrial organic matter affects variations of deposited amount of organic matter. Although TOC and TN concentrations of GH10-2011 increased at 14-7 cal kyr, C/N ratios show little change. Ratios of TOC/TS in two cores were 4~8 and these results indicate that redox condition in the seafloor environment was stable since the LGM. Variations of these properties indicate that the supplied amount from the land increased during low sea level in the last glacial stage and this influence decreased accompanying with rising of sea level. While, influences of supply from the land contribute little to the deposition environment at GH10-2011 because there were at the small basin detached islands.

Total inorganic carbon concentrations of two cores show commonality variations which these values are relative low (<4%) until 7 cal kyr and rapidly increases after 7 cal kyr. TIC concentrations until 7 cal kyr of GH10-2011 were stable, however, those of GH08-2004 decreased in 2% at 14~7 cal kyr. And radiolarian assemblage results show an increase of *Tholospyris spp.* inhabited in the equatorial area. These results suggest that the productivity of such as coccolith and foraminifer was relatively low in the last glacial stage and increased since 7 cal kyr. And a decreasing in TIC of GH08-2004 implies that the productivity at eastern part of Okinawa Island decreased by the influence of oligotrophic sea water around the equatorial area.

Keywords: sediment, CNS elements, radiolaria, sedimentary environment, sea level change, productivity