Paleoceanographic variations in the Southern Ocean during the last peak interglacial (the Eemian)

Minoru Ikehara [1], Kimitaka Kawamura [2], Katsunori Kimoto [3], Tadamichi Oba [4], Asahiko Taira [5]

[1] Inst. Low. Temp. Sci., Hokkaido Univ., [2] Institute of Low Temp. Sci., Hokkaido Univ., [3] ORI, Univ. Tokyo, [4] EES, Hokkaido Univ., [5] Ocean Research Institute, Univ. of Tokyo

To understand a condition of the climatic system during the last peak interglacial (Eemian) will promote a better understanding to estimate global climate changes for near future. Based on analyses of stable isotopes of foraminifera and several biomarkers on the deep sea sediments from the Tasman Plateau, an abrupt cooling in sea surface temperature has been found to have occurred at the late Eemian (~122 ka) in the Southern Ocean. Sea surface salinity decreased and marine biological productivity increased for same interval. These paleoceanographic changes were probably caused by a northward migration of the Antarctic Polar Front (APF). However, an abrupt cooling in the Southern Ocean seems to be happened a few millennia before the similar cooling occured in the northern hemisphere.