

Preliminary results of IODP Exp. 382: Iceberg Alley and Subantarctic Ice and Ocean Dynamics

*Yuji Kato¹, Osamu Seki², Mutsumi Iizuka², Masanobu Yamamoto³, Michael E. Weber⁴, Maureen E. Raymo⁵, Victoria L. Peck⁶, Trevor Williams⁷, - The IODP Expedition 382 Scientists

1. Center for Advanced Marine Core Research, Kochi University, 2. Institute of Low Temperature Science, Hokkaido University, 3. Faculty of Environmental Earth Science, Hokkaido University, 4. University of Bonn, Germany, 5. Lamont-Doherty Earth Observatory of Columbia University, USA, 6. British Antarctic Survey, UK, 7. International Ocean Discovery Program, Texas A&M University, College Station, USA

We collected sediment cores from five sites in Atlantic sector of the Southern Ocean during International Ocean Discovery Program (IODP) Expedition 382, which took place from March to May 2019. The recovered material includes continuously deposited Plio–Pleistocene sediments. Our primary aim is to reconstruct the past history and variability in Antarctic Ice Sheet (AIS) mass loss and associated paleoceanographic changes. The drilling sites include two sites (Site U1534 and U1535) at the northern edge of the Scotia Sea and three sites (Sites U1536–U1538) in the southern Scotia Sea. The materials from Sites U1534 and U1535, which are located in the vicinity of Subantarctic Front, will be used to reconstruct how ocean circulation responds to climate changes. The principal object of Sites U1536–U1538 is to study the flux of icebergs through “Iceberg Alley,” the main pathway along which icebergs calved from the margin of the AIS travel. In the current presentation, we will present an overview of the expedition with a special focus on biostratigraphic results and preliminary results of TEX86 derived sea surface temperature records in Sites U1537 and U1538 during the Plio–Pleistocene.

Keywords: IODP, Antarctic Ice Sheet, Iceberg Alley, Southern Ocean, paleoceanography