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[EJ] Evening Poster | M (Multidisciplinary and Interdisciplinary) | M-IS Intersection

## [M-IS06]Global climate change driven by the Southern Ocean and the Antarctic Ice Sheet

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The Southern Ocean and Antarctic ice sheet, which are the giant reservoirs of heat, water, and materials, have a potential to play central roles in long-term global climate change. This system is composed of the following sub-systems; ice shelf which is a place of the interaction of ice sheet and ocean, flowing iceberg, seasonal sea ice zone, Antarctic bottom water which drives the thermohaline circulation, active biological production and Antarctic Circumpolar Current. These sub-systems are interacted with each other and have significant impact on changes in the global environmental system. This session aim to summarize recent observational and simulation studies from various fields relating to the past and present changes in the Antarctic Ice sheet and Southern Ocean, which are essential elements for unraveling the changes in the global climate system. Further, future science plans for understanding of the environmental changes of the Antarctic Cryosphere is also discussed.

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## [MIS06-P03]Planktic foraminiferal assemblage in the Indian sector of the Southern Ocean since the last glacial

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Understanding the Antarctic Circumpolar Current (i.e., Antarctic polar front and Subantarctic front) is a key to climatic changes in the Southern Ocean and Antarctic ice sheets. Modern polar front ranges from 45°S to 60°S (Freeman et al., 2016), and the front position closely matches the boundary between carbonate and siliceous sediments (Dutkiewicz et al., 2015). Thus, the position of polar front can be estimated from the plankton assemblages of deep-sea sediments, which also provides insights into current systems related to the polar front (e.g., Agulhas current).

Here we performed planktic foraminifera census counts to reconstruct the position of polar front since the last glacial. Sediment samples are collected from DCR-1PC (46°S, 44°E, 2632 m water depth) located on the Delicate Rise in the Indian sector of the Southern Ocean.

Planktic foraminifera were abundant during the Marine Isotope Stage (MIS) 1 compared to the MIS2. High latitude species such as *Globigerina bulloides*, *Globorotalia inflata*, *Globorotalia truncatulinoides*, *Neogloboquadrina pachyderma* comprised assemblages during the MIS1, and *G. bulloides* and *N. pachyderma* dominated during the MIS2. We show the reconstructed sea surface temperature based on foraminifera census data. The relative abundance of foraminifera species indicative of the Agglut current variation (Peeters et al., 2004) is also investigated. In addition, we examine foraminifera size distribution in relation to the environmental changes since the last glacial.