

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 Del Caño 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 Agglus 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.

Keywords: Southern Ocean, Planktic foraminifera