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# SOUTH INDIAN OCEAN CIRCULATION - MEANDERING OF OCEANIC FRONTS ACROSS ANTARCTIC CIRCUMPOLAR CURRENT

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A first multidisciplinary expedition to the Southern Ocean was organized and undertaken by National centre for Antarctic and Ocean Research, Goa on board O.R.V. Sagar Kanya during austral summer (January – March) 2004. During the expedition CTD and XBT observations and water sampling were carried out along 45°E from 31° to 56°S and along 57°30'E from 48°S to 31°S. This paper presents the spatial variation in the frontal positions across the Antarctic Circumpolar Current based on the results of hydrographic parameters observed along 45°E, 57°30'E (present data), 30°E (WOCE data during February- March 1996) and Levites data (for an area of 1100 sq. km from 31°-41°S and 40°-50°E during February 2004). One of the significant results of these observations is the southward meandering of the fronts by 2° latitude from 45° to 57.5°E whereas this meandering is not evident from 30° to 45°E. The dynamic height of the sea surface relative to 1000 m is computed for each of the CTD stations and evidently a rapid drop from 1.59 to 0.45 dyn-m from the subtropical (40°S) to polar (56°S) region has been noticed. Between 49° and 56°S at ~160m depth low temperature waters are found which are formed in winter months followed by warming of the surface layers in summer. The near surface pycnocline south of the Polar Front seem to be strong and below this, uniform density waters are encountered. The likely causative factors for the meandering of the frontal positions are discussed in this paper.