**332**

## ANTARCTIC SLOPE FRONT STUDIES IN THE PRYDZ BAY AREA

A.V. Klepikov, N.N. Antipov

*Arctic and Antarctic Research Institute, St.Petersburg, Russia*

The main goal of the oceanographic studies during the last Russian Antarctic Expeditions was to investigate the structure of the Antarctic Slope Front (ASF) and water masses in the Prydz Bay.

144 CTD stations were made in the study area on the research and support icebreaker «Akademik Fedorov» from 1997 till 2005. During the last two years the processes at the continental slope were investigated in the region to the west of Prydz Bay. CTD soundings of Sea Bird 911plus were made with the high spatial resolution (about 3 miles between stations at the meridional sections). The oceanographic survey of January 2005 consists of 5 sections along 64°, 66°, 68°, 70° and 72° E. Two sections of this survey were the repeated sections of January 2004 cruise. All sections begin on the shelf near the shelf break (at the depth less than 500 m), cross the continental slope and reach the deep ocean area (with depths of more than 2000 m).

The observations at the sections indicate that the ASF is well determined primarily at the deep water level with high gradients of parameters. Deep convection events are found at most of these sections reaching a depth of 1500 – 2000 m. Thermohaline structure reflects active processes of the horizontal exchange at the ASF between the deep ocean waters and the shelf/slope waters resulting in particular in transformation and ventilation of relatively warm and salty Circumpolar Deep Water.

Observations show that cold and relatively fresh waters may flow down the continental slope in the region to the west of Prydz Channel (~ 72°E). Data demonstrate that Low Salinity Shelf Water is typical for the Prydz Bay. However, High Salinity Shelf Water (HSSW) which is important for bottom water formation was found at section 66° E in January 2005. The origin of this HSSW is not determined. Descending water in the region to the west of Prydz Channel results in deep water ventilation and, possibly, bottom water formation.

The surveys described may be considered as the preliminary study for SASSI (Synoptic Antarctic Shelf-Slope Interactions Study) project of IPY 2007/2008.