Pierpaolo Falco

University of Naples Parthenope, Italia

Italian mooring observations in the western Ross Sea from 1995 to 2016

Pasquale Castagno, Pierpaolo Falco, Arturo De Alteris, Massimo De Stefano, Giovanni Zambardino, Giancarlo Spezie and Giorgio Budillon

University of Naples Parthenope, Naples, ITALY

The Italian Marine Observatory in the Ross Sea (MORSea) project, funded by the Italian National Program of Research in Antarctica (PNRA), has a network of four active moorings in the western Ross Sea: two located in the Terra Nova Bay polynya, where the AABW precursor (High Salinity Shelf Water) is formed, and two close to the shelf break in the Drygalski and Joides troughs where the AABW is formed from the interaction of the shelf waters and the warm circumpolar deep water and subsequently exits from the continental shelf.

This network together with 3 moorings deployed from 1998 to 2007 in the central Ross Sea have an important role to assess the cross-shelf exchanges processes and changes in the AABW formation in the Ross Sea and how rapidly these changes occur.

Here, we present temperature and salinity time series and the flows variability measured at the four moorings from 1995 to 2016 to describe trends and variability of the water properties inside the Ross Sea. In particular, the flow and water properties variability associated with the tides and mesoscale instabilities are considered to establish their role in the cross-shelf exchange processes.