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Title: Differences on the thermohaline structure and water masses in the Bransfield Strait between the austral summer and winter of 2008

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abstract: Were observed near the Antarctic Peninsula the largest increases in air temperature and greater reductions in sea ice than at any other place in this continent. It is necessary a continuous monitoring of ocean conditions in this region, even in times of high concentration of sea ice. As an alternative to traditional ways of obtaining of oceanographic data and behavioral monitoring of top predators in the Southern Ocean, were fixed data collection platforms in the southern elephant seals (*Mirounga leonina*). These marine mammals perform deep dives during the entire year, even in conditions of high sea ice concentration. Using a data set consisting of 74 profiles collected during the summer and 43 profiles collected during the winter, we present transects and thermodynamics state diagrams and the changes of the thermohaline structure and water masses present in the Bransfield Strait in these two seasons. During the summer the values of potential temperature, salinity and potential density is in the range between -1.68° to 2.08° C, 33.91 to 34.87 psu and 27.13 to 27.83 respectively. In winter, the magnitudes of the differences in observed variables are smaller when compared with summer, and these bands between -1.84° to 0.82° C for potential temperature and between 34.14 to 34.68 psu and 27.43 to 27.89 for salinity and potential density. The thermohaline structure shows the major differences in the surface, where the seasonal heating and mechanical forcing cause a thin layer, relatively warmer and less saline overlap the Bransfield cooler waters. During the winter the water column becomes thermally uniform and salinities are increased mainly due to haline release held during formation of sea ice. Among the changes in the water bodies, observe the Antarctic Surface Water (AASW) only in the summer and the Winter Water (WW) and Ice Shelf Water (ISW) only in winter. The Warm Deep Water (WDW) and Bransfield Water (BW) are present in the two times analyzed.