

**Antarctic coastal circulation changes and their possible causes**

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Climate changes are associated with several environmental anomalies, such as the slowing down of the oceanic Meridional Overtuning Circulation (MOC), which in turn affects the heat distribution around the world. Among other factors, MOC variability is driven by changes in dense water formation properties, such as temperature, salinity and local circulation variability. Some of the most important places of bottom water production are located on the Southern Ocean, at Weddell and Ross Sea shelves. The many difficulties on obtaining in situ mooring data at those locations limit data collection about the continental boundary circulation. Many times, for studies that focus on coastal currents in the Southern Ocean, the solution is using numerical models to infer on the mean currents and their variability. Therefore, this work aims to investigate Antarctic coastal circulation using OCCAM (Ocean Circulation and Climate Advanced Modelling Project) model data. The results show a slowing down of current velocities on Weddell Sea continental shelf edge. This trend seems to reflect the retarded adjustment of the model in response to the sea ice cover excess on summer found in this region. The greatest power peaks of the current velocity time series spectra are concentrated on periods between 2 and 4 years. Those peaks can be related to the Antarctic Dipole, a mode of variability observed on the sea ice edge, resulting from the teleconnections between tropical climate (essentially represented by El Niño - Southern Oscillation phenomenon) and high latitudes climate.