



Long term observations of the Ice Shelf Water outflow from the Filchner-Ronne Ice shelf in the Southern Weddell Sea, Antarctica

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Antarctic Bottom Water (AABW) occupies large portions of the deep ocean and is the densest water mass in the world because of its cold temperature. The source water of AABW originating from the Weddell Sea is the cold, low-salinity Weddell Sea Bottom Water (WSBW). The low temperature and salinity of the WSBW is because of the contribution of the Ice Shelf Water (ISW) that got its characteristics by sea ice formation over the continental shelf of the southwestern Weddell Sea and the circulation underneath the Filchner-Ronne Ice Shelf. Water circulating in the ice shelf cavity is cooled by the contact with the ice due to heat conduction through the ice and by melting of the ice shelf itself. Any changes to the ISW properties might therefore result in changes of the AABW, and an increased understanding of variability within the ISW may help us understand the sensitivity of the AABW in the deep ocean. A great effort has been put into monitoring the ISW plume over a long time period in order to gain knowledge of its role in the climate system. Here we will focus on long-term results from the time series from the decadal long time series and planned observing systems.