



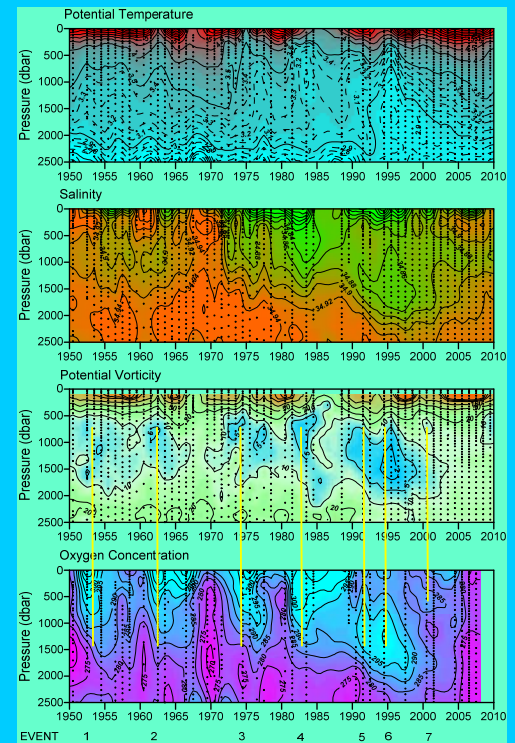
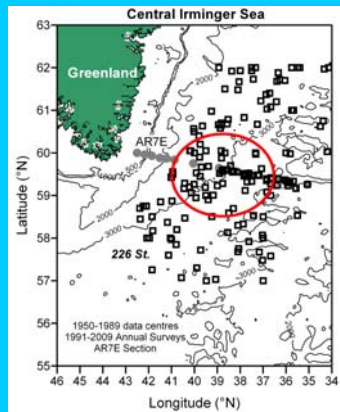
Hydrographic variability of the Irminger Sea.

H.M. van Aken and M.F. de Jong

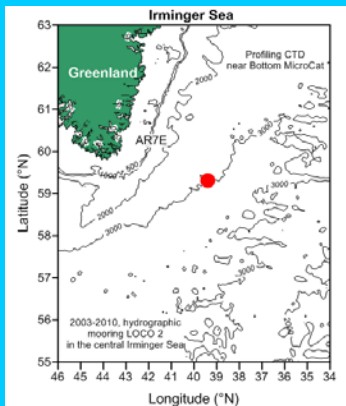
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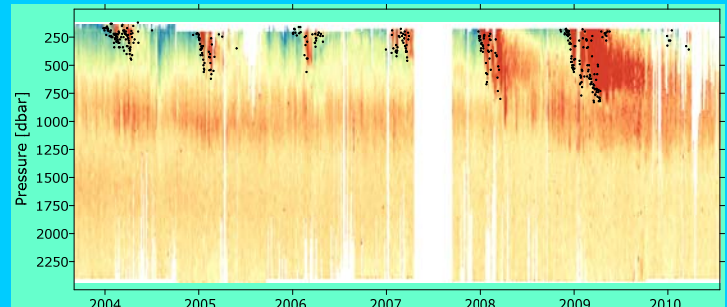
From historic hydrographic data annual hydrographic profiles have been produced for the central Irminger Sea (red circle). Annual surveys of the WOCE ARE7 line were used for 1990-2009, while data from data centres (ICES, WODB) were used for the period 1950-1989.



Temperature and salinity mainly display a multi-decadal variation at intermediate levels (Labrador Sea Water or LSW). Oxygen concentration and potential vorticity show a near-decadal variability, displaying 7 convective ventilation events (yellow bars) where new LSW was formed in the Labrador Sea. It takes 1 to 2 year to advect that LSW to the central Irminger Sea.

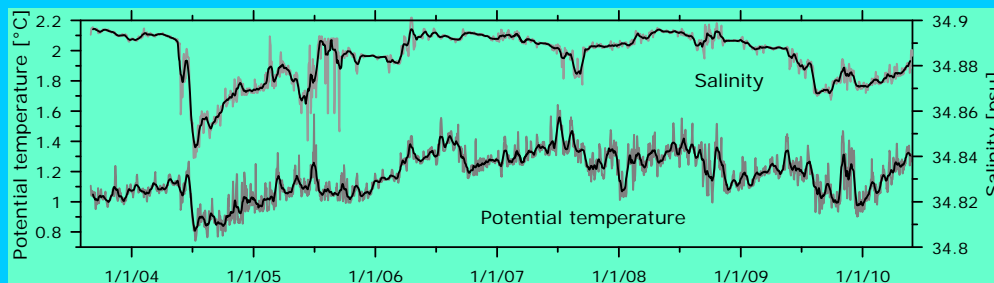


With a hydrographic mooring in the centre of the Irminger Sea profiles of temperature, salinity, and derived properties were determined from 2003 to 2010



layer thickness, determined in winter by convective mixing. In the winters of 2008 and 2009 ML thickness approached 1000 m.

Above the bottom the mooring measured the hydrographic properties of the Denmark Strait Overflow Water (DSOW). Salinity shows large changes at intra-annual to inter-annual time scales. The temperature has a relatively large annual cycle, with maxima around June/July



In cooperation with foreign colleagues these data are analyzed and will be published. One paper on LSW is already available: [van Aken, H.M., F.M. de Jong, and I. Yashayaev \(2011\) Decadal and multi-decadal variability of Labrador Sea Water in the north-western North Atlantic Ocean derived from tracer distributions: Heat budget, ventilation, and advection. Deep-Sea Research I, 58, 505-523](#)