



## **Recent changes in the Greenland Sea: Tracers and Hydrography**

**E. Jeansson** (1), K. A. Olsson (2), T. Tanhua (3) and T. Johannesen (4,1)

(1) Bjerknes Centre for Climate Research, University of Bergen, Bergen, Norway, (2) Dept. of Chemistry, Göteborg University, Göteborg, Sweden, (3) Dept. of Marine Chemistry, Leibniz Institute for Marine Sciences at Kiel University, Kiel, Germany, (4) Geophysical Institute, University of Bergen, Bergen, Norway

Time series of chemical and hydrographic parameters from mid-90s to 2006 in the central Greenland Sea are presented. In addition to potential temperature and salinity, oxygen and transient tracers (CFC-12 and CFC-11) have been measured between 1995 and 2006. The lack of deep convection since the 80s has changed the properties of the Greenland Sea Deep Water, which has become more or less continuously warmer and more saline during, at least, the last two decades. The change in temperature and salinity during the 90s has previously been reported as  $0.01^{\circ}\text{C yr}^{-1}$  and  $0.001^{\circ}\text{C yr}^{-1}$ , respectively. The change from the mid-90s to 2006 shows the same trend, and might now even increase more rapidly. At the same time, the levels of oxygen have decreased while the transient tracer concentrations have more or less levelled out, indicating that the deep water now has a larger contribution of Arctic Ocean Deep Water.

The ventilation depth of the Greenland Sea was larger in the 2000s, compared with the 90s. In accordance with this the transient tracer concentrations of the intermediate waters, down to 1500 m, has increased.