



## Ventilation of Upper Labrador Sea Water, 2003-2005

M. Rhein (1), D. Kieke (1), R. Steinfeldt (1), **K. Kirchner** (1)

Institut für Umweltphysik, Universität Bremen, Otto-Hahn-Allee, Bremen, Germany  
(mrhein@physik.uni-bremen.de)

In 2003 and in 2005, hydrographic data provided sufficient spatial coverage in the Labrador Sea to infer the basin wide changes in the water mass characteristic of the Upper Labrador Sea Water (ULSW). The observations reveal that the ULSW got considerably saltier and warmer since 2003. Although in the Labrador Sea convection leads to mixing with fresh surface water and is opposed to the observed salinity trend, the increased vertical homogeneity of the CTD profiles, the increase in the layer thickness of ULSW, and the intensification of the potential vorticity minimum in 2005 compared to 2003 point to convection in winter 2005 which ventilated at least about 20% of the Labrador Sea region.