Geophysical Research Abstracts, Vol. 9, 05410, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-05410

Interannual variability in the North Atlantic circulation inferred from transient tracers between 2002 and 2006.

E. Louarn (1), P. Morin (1), H. Mercier (2), P. Le Corre (1)

(1) Laboratoire de Chimie Marine, Université Bretagne Occidentale & UMR CNRS 7144, France, (2) Laboratoire de Physique des Océans, Ifremer, Brest (elouarn@univ-brest.fr/ Phone : +33-29849-8766)

In 2002, the OVIDE program, which is the french contribution to CLIVAR, was initiated to investigate the amplitude of the meridional overturning cell in the North Atlantic and to study the interannual variability of the intermediate and deep circulation in the North Atlantic subpolar gyre. A repeated hygrographic/ADCP/tracer data will be sampled between Greenland and Portugal every two years from 2002 to 2010. The interannual variability of intermediate to deep water masses present between 1200 m and the deepest part of the basin are studied in the Eastern Basin and in the Irminger Sea with regard to their CFCs concentrations. A comparison of the CFCs results obtained over the section in 2002 and 2006 will be presented with a particular interest concerning the Labrador Sea Water (LSW) circulation. In the Irminger Sea, the LSW flowing from the Labrador Sea showed a two cores structure. The deepest core situated at a depth of 1700 m and characterized as an oxygen maximum and salinity minimum in 2002, was highly eroded in 2006. The upper core, known as uLSW, is highlighted as a CFC maximum around 700 meters. Between 2002 and 2006, CFC-11 concentrations were shown to increase in that core whereas the CCl4 concentrations were decreasing. These variations are used to estimate the mean ages and origins of the uLSW in the Irminger Sea. The interannual variability of the other deep and intermediate water masses (DSOW and ISOW in the Irminger Sea; MSW, ISOW and LDW in the Eastern basin) will also be presented.