



## **Export Rates of North Atlantic Deep Water**

R. Steinfeldt and M. Rhein

Universität Bremen, Institute of Environmental Physics, Bremen, Germany (rsteinf@physik.uni-bremen.de, +49 421 218-7018)

The concept from Bolin and Rhode (1973) of transit time distributions (TTDs) for reservoirs is applied to North Atlantic Deep Water (NADW) in the subpolar North Atlantic. The reservoirs are the different density classes of NADW, i.e. Upper Labrador Sea Water (ULSW), Labrador Sea Water (LSW), Gibbs Fracture Zone Water (GFZW) and Denmark Strait Overflow Water (DSOW). The TTDs for these reservoirs are computed as volume integral of pointwise TTDs, which are inferred from CFC data collected between 1997 and 2005. It will be discussed, in how far these TTDs and their temporal derivatives can be used to infer ventilation and export rates for NADW. These results will be compared with direct observational data, e.g. the export of NADW from the subpolar North Atlantic in the deep western boundary current as reported in Schott et al. (2006).

Bolin, B., and H. Rohde, A note on the concepts of age distribution and transit time in natural reservoirs, *Tellus XXV*, 1, 1973.

Schott, F. A., J. Fischer, M. Dengler, and R. Zantopp, Variability of the Deep Western Boundary Current east of the Grand Banks, *Geophys. Res. Lett.*, 33, L21S07, doi:10.1029/2006GL026563, 2006.