



THE NORTH ATLANTIC SUBPOLAR GYRE IN HIGH RESOLUTION MODELS

A. M. **Treguier** (1), S. Theetten (1) E. Chassignet(2), T. Penduff (3), R. D. Smith (4), L. Talley (5).

(1) Laboratoire de Physique des Océans, IFREMER, Brest, FRANCE, (2) RSMAS, University of Miami, (3) LEGI, CNRS, Grenoble, (4) LANL, Los Alamos, (5) Scripps Institution of Oceanography, San Diego.[treguier@ifremer.fr]

Low stratification, complex dynamics and small salinity contrasts makes the subpolar gyre of the North Atlantic a challenging region for oceanic models. High resolution models like POP $1/10^\circ$, MICOM $1/12^\circ$ or ATL6 (the CLIPPER project $1/6^\circ$ model) have shown good skill in the subtropical regions. Our purpose here is to assess their performance in the North Atlantic subpolar gyre. A careful comparison is attempted with recent direct velocity measurements from WOCE surface drifters or deep floats. This comparison reveals shortcomings in models but also in deep data, which do not seem dense enough to estimate the transport in the boundary currents. The water mass properties of the models are compared with climatology and recent cruises. Some models have excessive convection in the Labrador and Irminger Seas, and all models tend to increase the salinity of the Labrador Sea water. The different behaviors of the models can help discriminate between possible sources of error.