



Interannual to decadal variability of the North Atlantic intermediate waters over the last 30 years.

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We aim at describing the spatial structure of the interannual variations of water mass properties associated with the trends in heat content observed in the hydrological data bases (Levitus et al. 2005) and more recently in the ARGO datasets. The study is based on gridded fields of temperature and salinity obtained from two analysis of the upper 2000m of the North Atlantic. The first analysis is the reconstruction of the annual means over the 1980-1999 period based on CTD data. The second analysis takes advantage of the higher coverage provided by ARGO floats that allow to produce monthly means over the 2000-2007 period. The mean state over the 28 years has been computed and will be used as a reference. Differences between this mean and the last WOA05 climatology are discussed.

Interannual variability is studied over the ARGO period (2000-2007). Heat and salt content variations are analyzed as a function of depth and latitude. Changes in the horizontal structure is explored focusing on the three main intermediate water masses: Labrador sea water, Mediterranean water and Antarctic intermediate water. Changes in the position of the main fronts that define the various gyres limits are followed. Finally, a similar analysis is performed to compare the decadal means of the three decades covered by the analysis.