



Comparing the steric height in the Northern Atlantic with the satellite altimetry

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Anomalies of dynamic height derived from an analysis of Argo profiling buoys data are analysed to assess the relative roles of contributions from temperature and salinity over the North Atlantic for the period of 1999-2004. They are compared with dynamic topography anomalies based on TOPEX/Poseidon and Jason altimetry. It is shown that the halosteric contribution to the anomalies of dynamic height is comparable in magnitude to the thermosteric one on the interannual scale. Taking salinity into account improves the agreement between zonally averaged trends in satellite dynamic topography and dynamic height. The correlation between the trend curves increases to 0.74 from 0.56 when only temperature variability is taken into account. The implication of this result is that the salinity contribution cannot be neglected in estimating the change of the ocean heat content through anomalies in the sea surface height derived from the satellite altimetry.