



Using Argo, Grace and altimetry to assess the quasi stationary circulation in the North Atlantic

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The data available from Argo profiling buoys and satellite altimetry are combined into Inverse Finite Element Ocean model (IFEOM) for each of the years 2005 and 2006. The model solves for temperature and salinity fields that are close to measurements, respects quasi-stationary dynamical balances, and simultaneously produces estimates of the circulation. Several experiments have been performed to reconstruct the interannual variability. The assimilation of Argo data alone produces qualitative picture of variability, which remains affected by transient effects present in the data. Results are compared to the variability in the altimetry data, which pronounces large scale patterns. It is shown, that including altimetry improves the circulation picture. We estimate variability as result of combined assimilation of Argo and altimetry.