



A first approach of 3D Geostrophic Currents based on GOCE, altimetry and ARGO data

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The most recent advances in the geoid determination, provided by the Gravity Field and Steady-State Ocean Circulation Explorer (GOCE) mission, together with the continuous monitoring of the sea surface height by the altimeters on board of satellites and Argo data makes possible to estimate the ocean geostrophy in 3D.

In this work, we present a first approach of the 3D geostrophic circulation for North Atlantic region, from the surface down to 1500 m depth. It has been computed for a 10 years period (2004-2014), using an observation-based approach that combines altimetry with temperature and salinity through the thermal wind equation gridded at one degree longitude and latitude resolution. For validation of the results, the estimated 3D geostrophic circulation is compared with Ocean Circulation Models simulations and/or in-situ data, showing in all cases similar patterns.