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Poster
The Azores and St. Helena currents (AzC and StHC, respectively, the latter also known as Tristan da Cunha current), in the North and South Subtropical Atlantic Ocean, have been subject of a few studies using in situ data, that pointed towards a number of similarities between them regarding intensity, depth penetration and volume transport, and the latitudes at which their main cores are found (34°N and 34ºS for the AzC and StHC, respectively). Moreover, it is known that both systems have associated subsurface adjacent countercurrent flows.

In this study, nearly two decades of satellite altimetry are used in synergy with SST (Sea Surface Temperature) and in situ data to inspect the congeneracy of the AzC and StHC and their associated fronts. This work also aims at achieving a better description of the ocean circulation variability over the North and South Subtropical Atlantic basins on meso and large scales, with focus on the study of the congeneracy between both current systems.
Satellite altimetry, in combination with a mean dynamic topography (MDT) model computed from in situ data, was previously used to derive a time series of absolute dynamic topography (ADT), which allowed the study of the AzC variability over 1995-2006, namely the existence of inter-annual variability in its axis position. In addition to extending the previously used altimetric data set to the whole 1992-2011 period for the AzC, a similar study for the StHC is performed to assess possible resemblances between both currents in what concerns their inter-annual variability.

Both SLA and eddy kinetic energy (EKE) time series show the existence of interannual variability on both current systems, being significantly larger for the StHC region. Furthermore, the surface thermal signatures of the two currents/fronts, derived from available SST optimally interpolated microwave and infrared products

(AMSR and AVHRR daily grids with 0.25° spatial resolution, Jun 2002 – Sep 2011), are also inspected and compared to the corresponding ADT-derived signatures for the overlapping period. These preliminary results are expected to improve the knowledge of the South Atlantic variability, the Atlantic inter-hemispheric connections and the correlation of long-period variability of the above referred oceanographic fields with the known phenomena of coupled atmosphere-ocean variability that affect the Atlantic, which are expected to occur on inter-annual to decadal time scales.

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