



## **Mesoscale contribution to salinity transport in the North Atlantic subtropics (2011-2013)**

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Mesoscale activity is expected to contribute to transport salt horizontally out of the region of maximum salinity of the North Atlantic subtropical gyre. Using in situ and satellite observations, we investigate the contribution of mesoscale activity to the salinity budget in the central part of the subtropical gyre. Surface current data originate from close to 150 surface drifters deployed for SPURS, as well as satellite altimetry from Aviso products, and salinity data originate mostly from Argo floats, over 100 drifters and thermosalinographs, in particular from the SSS observing system ships Coriolis and Toucan ([www.legos.obs-mip.fr/fr/soa/ore-sss/distribution](http://www.legos.obs-mip.fr/fr/soa/ore-sss/distribution)). The period investigated is from 2011 to 2013. Near 30°N, north of the subtropics, as well as near 20°N, SMOS data indicate significant meridional transport, despite the large noise on the data, and the filtering of the smaller scales (100 km) of the transport. Closer to the core of the subtropical gyre, we find evidence in the drifter data of significant meridional transport, but that is highly irregular in time, as it seems associated with a few specific events. Whether this is due to the inhomogeneous and Lagrangian nature of the sampling is discussed. We also check the budget at a smaller spatial scale using a dedicated meso-scale cruise (Strasse) in August 2012.