

## Decadal Evolution of the Atlantic Meridional Overturning Circulation

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Here we report the results of using contemporary satellite measurements (radar altimetry sea-level and current velocities, GRACE ocean bottom pressure and Greenland melt-water freshening fluxes, sea surface temperature), tide gauge sea-level and hydrographic data to establish an observational system to initiate the potential monitoring of the present-day evolution of the Atlantic Meridional Ocean Circulation (AMOC). Our project intends to address the following scientific questions: (1) what is the current state of the AMOC? (2) How has the AMOC varied in the past on the interannual to decadal or longer time scales? (3) Is the AMOC evolution correlated with basin-scale sea-level change? We have computed surface and subsurface current velocity and transport anomalies, relative to a geoid model based on GOCE gravity field, using radar altimeter data with spatial coverage up to  $\pm 81^{\circ}$  latitude bounds (ERS-2 and Envisat), and Argo hydrographic data in the North Atlantic Ocean, 2000–2012. We then report results of our analysis of the present-day evolution of the surface and subsurface current and transport anomalies in the North Atlantic ocean and the Labrador Sea regions.