



Absolute geostrophic transports at 47°N in the Newfoundland Basin

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In the western North Atlantic, warm and saline water is brought by the Gulf stream system from the subtropics into the subpolar gyre, thereby forming the main upper branch of the AMOC. We present geostrophic transport measurements from an array of six inverted echo sounders equipped with high precision pressure sensors (PIES). The array is situated at the inflow to the subpolar gyre at 47°N in the Newfoundland Basin. The presented PIES data was measured between 2013 and 2017. The separation in the different segments allows to resolve the North Atlantic Current, the Newfoundland Basin recirculation and the inner basin transport. We additionally exploit the correlation between the transports measured by the inverted echo sounders and the geostrophic velocities from altimetry data to extend the transport time series back to 1993. We will discuss the transport and recirculation means and trends, resolve the variations from daily to inter-annual time scales, and investigate possible relations to the North Atlantic Oscillation and to our transport measurements at the Mid-Atlantic Ridge.