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Using altimetry combined with hydrographic data to estimate transports across North Atlantic sections

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A new method to get mass and heat transports estimates across zonal North Atlantic sections is presented, using hydrology together with altimetric data.

Surface velocities computed from altimetric data are compared to ADCP measurements of the Ovide project (hydrographic sections repeated every two years from Portugal to Greenland) and show a very good agreement. Altimetry data is then used to constrain a geostrophic inverse model. Transports across Ovide sections previously obtained using ADCP data to constrain the inverse model are used as reference.

The new method gives less precise results than when ADCP is used but is found useful to estimate transports of the main currents crossing the sections. It can be applied to get transports estimates across sections for which ADCP measurements are not available.