



## **Finestructure variability associated with mesoscale eddies in the subpolar North Atlantic**

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Observational estimates of elevated vertical diffusivity in regions of high mesoscale eddy activity point toward the relevance of energy loss from eddies to maintain the ocean stratification. Estimates of net energy transfers between the internal wave field and a mesoscale eddy field indicate wave–eddy coupling as one of the major sources of internal wave energy.

Here we investigate the relation between the strength of eddies estimated from satellite and shipboard observations and the intensity of the internal wave field in terms of shear variance from lowered acoustic Doppler current profiler (LADCP) observations. We analyze hydrographic and velocity data from five cruises carried out between 2003 and 2008 in the subpolar North Atlantic, a region where a large number of eddies is generated by the meandering North Atlantic Current (NAC). The observational data amount to a total of more than 400 stations. Satellite altimetry data from Aviso are used to determine the size and velocity scale of eddies along the cruise tracks to compare their individual Rossby number with the magnitude of the vertical shear.

The first results indicate increased finescale shear variance in the vicinity of eddies especially in their deeper part below the core.