



The use of multiple AUVs in FASTNet: a study of Ocean Shelf Exchange

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We present early results and future plans from the £ 4.5M UK NERC-funded project FASTNet (Fluxes Across the Sloping Topography of the North East Atlantic). The shelf edge is the controlling gateway to exchange of nutrients and carbon between oceanic and shelf waters, with impacts on global climate and on regional resources. As a result the shelf edge has been the focus of a number of studies which have improved our understanding of exchange processes. However, there are significant deficiencies in the current understanding of shelf edge exchange transport due largely to the sparseness of observations. Gliders and long-endurance AUVs look set to change this and are an important aspect of FASTNet. We will report on the evolution of physical processes during the breakdown of seasonal stratification at the Celtic shelf edge observed by Glider pairs from June 2012 to January 2013. Glider CTD profiles have been ported realtime onto the GTS, and assimilation into UK Met Office forecast models has been trialled. We will report on 9-days of continuous Glider-based microstructure profiling made near the shelf break in June 2012, revealing the temporal variability of shelf-break generated turbulent mixing. Finally we will present plans to use long endurance AUVs to quantify the seasonal variations in the off-shelf bottom Ekman drain at the Malin Shelf edge during 2013/14.