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Turbulence sensitivity study in the IBI region

G. Reffray, J. Chanut, S. Cailleau, and B. Levier
greffray@mercator-ocean.fr

In the framework of building a high resolution operational system covering the IBI area (Iberian Biscay Irish), a turbulence sensitivity study is carried out to improve the results of the NEMO model. This is particularly important on the shelf where the mixing is very strong and mainly induced by the intense tidal currents.
The investigated work is to test some parameterizations more sophisticated (for ex: stability functions from Canuto (2001) or surface boundary conditions including wave effects from Mellor and Blumberg 2003) and to note if the biases with the observations are reduced as expected. To make this numerical study easier, the Generic Length Scale model (Umlauf and Burchard, 2003) has been implemented. The choice of the dissipation rate as turbulent scale has been done because this closure is well documented and contrary to the Mellor-Yamada turbulent scale, this equation does not need any wall function to provide results physically relevant.