



Interannual Variability of Deep-Water Formation in the Gulf of Lion, Western Mediterranean

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The Gulf of Lion, Western Mediterranean, is one of the major sites of deep-water formation in the world. Over the last decades, the deep-water formed there has become saltier and warmer (Bethoux et al., 1998) with a disruption in this trend in 2004-05 (Lopez-Jurado et al., 2005), associated with the formation of a new, denser, deep water.

We aim to quantify the relative impact of the atmospheric forcing compared to preconditioning (defined here as the structure of the water column before the onset of convection). The interannual variability of Western Mediterranean Deep Water (WMDW) is investigated using the MIT global circulation model initialised with temperature and salinity profiles taken from the Dyfamed site (between Nice and Corsica, from 1991), and forced by atmospheric fluxes from NCEP/NCAR reanalysis.

The second point of focus will be the importance of the short periods of high buoyancy loss relative to the one of the integrated buoyancy flux. The integration domain being a rectangular box, conclusions from this experiment may be generalised to other sites of open-ocean convection, such as the Labrador and Greenland Seas.