



High resolution modelling of dense water formation in the Northwestern Mediterranean

Claude Estournel, Patrick Marsaleix, and Pierre Damien

Observatoire Midi-Pyrénées, Laboratoire d'Aerologie, Toulouse, France (claude.estournel@aero.obs-mip.fr)

The period that extends from summer 2012 to summer 2013 was the subject of several field campaigns in the northwestern Mediterranean that allowed to characterize the stratification on a seasonal scale in this region of deep water formation. This period is therefore ideal for studying the hydrodynamic processes responsible of the stratification evolution during the three main phases that are preconditioning, convection and restratification.

A 1 km resolution simulation of the vertical stratification evolution of the northwestern Mediterranean between summer 2012 and spring 2013 was conducted. The evolution of the stratification is studied by analysing the respective role of the vertical mixing and the role of lateral advective processes from the event to the seasonal scale. The focus is put on the effect of meso and submesoscale processes involved in the restratification of the water column during and after the convection period.