



## **Observation of 2012-2013 deep convection events in the north-western Mediterranean Sea**

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During winter 2012-2013, open-ocean deep convection occurred in the Gulf of Lions (Northwestern Mediterranean Sea) and has been thoroughly documented thanks to the deployment of several gliders at the same time, Argo profiling floats, dedicated ship cruises, and a mooring located within the deep convection area thanks to several national and European projects (GROOM, JERICO, PERSEUS, MOOSE, SOCIB, MERMeX, HyMeX, ASICSMED, REP12, REP13). We show that deep convection reached the bottom in winter early in February 2013 and present results about the three overlapping phases of deep convection: preconditioning, violent mixing and restratification. Thanks to these intense observational efforts we also present quantitative results with estimates of heat and salt contents at the sub-basin scale at different time scales (diurnal to seasonal), through optimal interpolation techniques in particular.