



Observed and modeled mixed-layer variability on the continental shelf of Sardinia (Western Mediterranean)

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An important task of Military Oceanography is the prediction of mixed-layer properties and their spatial and temporal variability. In the mainframe of the REP14-MED sea trial which was conducted under the lead of CMRE in June 2014 in the waters west of Sardinia, an oceanographic mooring was deployed on the continental shelf which recorded the seawater temperature between the surface and 40-m depth with high resolution for about twelve days; meteorological parameters were collected at the same time on top of the mooring by a meteorological buoy. A series of ROMS model runs was conducted and validated against the observations. Those runs applied different setups for the forcing at the lateral open boundaries and at the surface, different arrangements of the vertical coordinates, and different strategies for the assimilation of data from CTD casts and gliders. The goal was to test the sensitivity of the forecast skill to the different setups and to find a “cheap” setup which predicts the observed temperature and the mixed-layer depth and their temporal variabilities to a satisfactory degree. That setup is supposed to provide also reliable forecasts for the other areas of the model domain.