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Hydrodynamic characteristics in the Levantine Basin in autumn 2016 – The CINEL experiment (CIrculation and water mass properties in the North-Eastern Levantine)

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During the CINEL experiment, currents and thermohaline properties of the water masses in the eastern areas of the Levantine Basin (Mediterranean Sea) were monitored with mobile autonomous systems in October-December 2016. Two gliders were operated together with satellite-tracked drifters and Argo floats to study the complex circulation features governing the dynamics near the coast and in the open sea. Strong mesoscale and sub-basin scale eddies were detected and were crossed several times by the gliders during the experiment. The physical and biogeochemical parameters were sampled, showing peculiar characteristics in some of the mesoscale features and a probable interaction with a persistent coastal current off Israel. The in-situ observations were interpreted in concert with the distribution of tracers (sea surface temperature, chlorophyll) and altimetry data obtained from satellites. Numerical simulations with a high resolution model in which deep profiles of temperature and salinity from gliders were assimilated, were used in near-real time to fine tune the observational array and to help with the interpretation of the local dynamics.