Abstract Submitted
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Near-inertial waves within an anticyclonic eddy in the Mediterranean Sea: Observations and numerical simulations[1] PASCALE LELONG, Northwest Res Assoc, PASCALE BOURUET-AUBERTOT, YANNIS CUYPERS, LOCEAN, Université Pierre et Marie Curie, Paris, CYPRUS EDDY MODELING COLLABORATION — One of the objectives of the BOUM field experiment, conducted in the Mediterranean Sea during the Summer of 2008, was to investigate the impact of submesoscale ocean dynamics on biogeochemical cycles. Analysis of data collected in the permanent, warm-core, anticyclonic Cyprus eddy provides a case study for near-inertial wave generation and turbulence in the presence of an eddy. Observations reveal the presence of near-inertial oscillations over the entire profile, from the mixed layer to below the base of the eddy. We present the results of a parallel LES numerical study with a Boussinesq pseudo-spectral code which was designed to explain the observed near-inertial signal. Two generation mechanisms are discussed: (i) inertial pumping at the base of the mixed layer following a wind event and (ii) adjustment of the eddy with possible trapping at the base of the eddy. Our numerical study confirms the role of anticyclonic eddies in influencing the propagation of wind-driven inertial oscillations into the thermocline.

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