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Observations of inertial oscillations affected by mesoscale activity in the Northeast Atlantic Ocean

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Observations of surface drifters launched over the continental slope of Portugal (Bay of Setúbal) are analyzed with the Rotary Wavelet Spectrum Method to study the contribution of mesoscale activity to near-inertial variability. Drifter data used here are part of the MREA04 (Maritime Rapid Environmental Assessment 2004) sea trial carried out by the NATO Undersea Research Centre (NURC) off the west coast of Portugal. Altimetry data from AVISO on a 1/3° Mercator grid are used to compute vertical relative vorticity (ζ) maps and track near-inertial variability along the drifter records. Subsequently, the local Coriolis (f) and effective Coriolis ($f_{eff} = f + 1/2\zeta$) frequencies are estimated for every drifter position. In this work we take a special interest in the area of Cape St. Vicent where a remarkable blue shift of near-inertial oscillations is observed in association with a cyclonic eddy migrating northward along the Portuguese coast. Results of the Rotary Wavelet Method highlight the consistency of near-inertial variability observed in the drifter records with the subinertial geostrophic activity computed with altimetry data.