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Spreading of near-inertial energy in a $1/12^o$ model of the North Atlantic Ocean

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Near-inertial energy in the ocean is thought to be redistributed by β-dispersion, whereby near-inertial waves generated at the surface by wind forcing propagate downward and equatorward. In this letter, we examine the spreading of near-inertial energy in a realistic $1/12^o$ model of the North Atlantic driven by synoptically varying wind forcing. We find that (i) near-inertial energy is strongly influenced by the mesoscale eddy field and appears to be locally drained to the deep ocean, largely by the chimney effect associated with anticyclonic eddies, and (ii) the interior of the subtropical gyre shows very low levels of near-inertial energy, contrary to expectations based on the β-dispersion effect.