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Scattering of small-scale internal waves by near-inertial wavepackets in the ocean JULIE VANDERHOFF, JAMES ROTTMAN, KEIKO NOMURA, University of California, San Diego — The breaking of oceanic internal waves is an essential part of the deep-ocean mixing processes that contribute to the general circulation of the ocean, the exchange of heat and gases with the atmosphere, the distribution of nutrients and the dispersal of pollutants. The aim of this work is to further our understanding of how a spectrum of a small-scale internal gravity waves is modified as the waves propagate through a realistic ocean environment. In particular we use ray theory and fully nonlinear numerical simulations to compute the evolution of an initial spectrum of small-scale internal waves as they propagate through a collection of near-inertial waves. Previous work on this topic is restricted to ensembles of small scale waves with a single horizontal wavelength. We extend this analysis to include a realistic ensemble of horizontal wavelengths.

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