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Geographical Variability of the Internal Wave Field: A Search for Sources and Sinks

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ABSTRACT

Internal wave records from a variety of deep water locations in the North Atlantic have been reduced by common analysis methods in a search for systematic deviations from a universal spectral model. Such inhomogeneities are probably necessary conditions for sources and sinks of the motion. For a number of reasons, only records at 2000 m and below were used. Real variations in energy level of up to an order of magnitude were found, but the only clear inhomogeneities are associated with bottom topography, especially in those records obtained near Muir seamount. The effects, if any, on the internal wave field by the large velocity and shear of the Gulf Stream region are weak. Apparent topographic sources are inconspicuous at very short distances, suggesting a very rapid, nonlinear recovery of the spectrum to an equilibrium form.

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