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The Climatology of Deep Ocean Internal Waves

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ABSTRACT

The search for regions of the deep ocean where the canonical Garrett-Munk spectrum does not apply is continued here in an effort to obtain a zero-order wave climatology and some insight into wave dynamics. A number of such regions have been found 1) within canyons, 2) in immediate proximity to topographic features, 3) in regions of high mean shear and 4) on the equator. Near topographic features energy levels are higher (especially within a canyon), and there is a pronounced anisotropy, but the shape of the frequency spectrum changes little. The absence of the inertial peak on the equator seems to make little difference to the frequency spectrum there. Elsewhere the level and shape of the internal wave frequency spectrum are remarkably constant. Apparent deviations in the wavenumber spectrum do occur in proximity to the equator and in the Florida Current. Horizontal polarization changes are associated with topography and large mean shears.

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