Abstract View

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Topographic Waves over the Continental Slope

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ABSTRACT

Current meter data taken during a one-year period over the continental slope and upper rise in three cross-isobath sections have been examined for energy distribution, coherence, and phase propagation of topographic waves. A peak at 15 days is present in the energy preserving spectrum of the near-bottom currents on the rise and slope. Phase propagation is offshore, and little energy is found in reflected waves. These results are consistent with earlier findings on the lower rise at Site D. Onshore energy flux associated with topographic waves is deflected by the continental slope, and wave energy propagates along isobaths on the lower slope and upper rise. The along-isobath coherence scale is about 200 km. The waves are probably generated by meanders in the Gulf Stream.