Abstract View

Stochastic Wind Forcing of Baroclinic Rossby Waves in the Presence of a Meridional Boundary

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ABSTRACT

The quasigeostrophic response of a continuously stratified ocean to a band-limited white-noise windstress curl is examined in an infinite and semi-infinite ocean. Baroclinic Rossby waves—predominantly of first mode character—determine an energy range in the frequency spectra as a result of the finite range of scales in the forcing and wave dispersion. Free waves emanating from an eastern boundary superimpose on resonantly excited waves and lead to a nonhomogeneous zonal distribution of energy with increases westward.

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