



Abstract View

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Wind Forced Internal Waves in the North Pacific and Sargasso Sea

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ABSTRACT

The three-dimensional structure of the near-inertial frequency internal wave field was measured at two open ocean sites using expendable velocity profilers. Both wave fields appear to be dominantly wind forced although their vertical structure and horizontal scales are quite different. The HYDRO-79 data were taken in the Sargasso Sea in September 1979. The internal wave field is predominantly downward propagating and vertically uniform, when WKB scaled, in the upper 800 m of the ocean. The energy density is roughly equal to Munk's (1981) universal value. The STKEX data were taken during a period of strong storms in the northeastern Pacific Ocean in November 1980. In the upper few hundred meters the wave field is five times larger horizontally and five times more energetic, when WKB scaled, than the HYDRO-79 wave field. Measurements made after the passage of a strong cold front show an even more energetic and larger scale wave field extending to 500 m. Comparison with the simulations of Price (1983a,b) suggests that this change may be due to the generation of near-inertial frequency internal waves by the wind stress variation associated with the cold front.

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