



## Abstract View

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## Turbulence in the California Undercurrent

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### ABSTRACT

Vertical profiles of microstructure velocity over the San Diego Trough showed enhanced levels of kinetic energy dissipation in the intrusive region between the California Undercurrent and the surface California Current. If the observed rate of dissipation is typical, then the kinetic energy of the undercurrent is extracted with a minimum time scale of 11 days. The time scale for the dissipation of total mechanical energy (kinetic plus potential) and the transit time from southern California to Vancouver Island are comparable. The vertical eddy diffusivity is less than  $1.9 \times 10^{-5} \text{ m}^{-2} \text{ s}^{-1}$  and is not a factor in the mixing of the undercurrent.

The most frequently observed thickness of a turbulent layer is 1–2 m. Layers thinner than 6 m contribute the most to the total dissipation, while thicker and less frequent layers are noticeable contributors.

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