



Joint GFDI/Physical Oceanography Seminar

"Salt Fingers, Steps and Mixing in the Tropical Atlantic"

Dr. Ray Schmitt

Woods Hole Oceanographic Institution

Abstract

Diapycnal mixing plays a significant role in the ocean's circulation and uptake of heat and carbon dioxide, but has not been quantified in salt-finger driven thermohaline staircases. We recently performed a tracer release experiment in the western tropical Atlantic staircase at 400 m depth. The observed dispersion implies an effective diapycnal diffusivity for tracer and salt of 0.8 to $0.9 \times 10^{-4} \text{ m}^2/\text{s}$. Temperature microstructure data interpreted in terms of a vertical production-dissipation balance yields a smaller effective diffusivity for heat of $0.45 (\pm 0.2) \times 10^{-4} \text{ m}^2/\text{s}$, consistent with salt fingers and well above the mixing ascribable to mechanical turbulence.

*****Note special day and location*****

Thursday, 8th December 2005

2:30 pm

GFDI Seminar Room, Keen Bldg.