



## **The impact of near-inertial waves on mixing in the equatorial oceanic thermocline**

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Recent observations and numerical experimentation show that both conventional measurements and climate models are missing a significant source of mixing in the equatorial thermocline. High resolution measurements reveal that the vertical shear in the thermocline is dominated by small vertical scale features that are strongly related to regions of active mixing. A major source for this small scale activity is wind-generated near-inertial waves. The effects of stratification, ocean currents and the background internal gravity wave field on the generation, propagation and mixing of near-inertial waves will be presented. Accounting for the wave induced mixing in a coupled GCM induces a large change in the state of both the ocean and atmosphere. The nature of the generation mechanism of the small scale features suggests the potential for significant feedbacks between ocean mixing and the low frequency variability of the coupled system, such as ENSO.