

Abstract Submitted  
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**The three layer structure of a stratified oceanic bottom boundary layer** JOHN TAYLOR, SUTANU SARKAR, University of California, San Diego — A turbulent boundary layer, generated when a uniformly stratified fluid in geostrophic balance flows over an adiabatic wall, is examined through large eddy simulation. Three layers with different dynamics are identified. The lowest layer remains relatively well-mixed and stratification effects are mild. The growth of the mixed region is inhibited when the external stratification is large. Above the mixed layer, a thermocline forms and is associated with elevated mean shear and strong buoyancy effects. The interaction of unsteady turbulence and the thermocline leads to the generation of internal gravity waves. The waves then propagate into the outer region to create a third layer with fluctuation energy but no mean shear. The characteristics of the waves are dependent on the local stratification, and turbulence time and length scales at the generation site.

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