

Abstract Submitted  
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**Internal Waves in Shear Flow**<sup>1</sup> SCOTT WUNSCH, ALAN BRANDT<sup>2</sup>,  
Johns Hopkins University Applied Physics Laboratory — Internal waves propagating through a region of shear flow can exchange energy with the mean flow. This effect is most pronounced at a “critical level,” a depth where the wave horizontal phase velocity matches the local mean flow speed. Waves may be reflected or transmitted through the critical level, gaining or losing energy by exchange with the mean flowfield. The linear theory of internal waves suggests that an increase in wave energy, or amplification, may be possible if the Richardson number is less than 1/4 at the critical level. Several laboratory experiments on internal waves interacting with a critical level have been published, but none have demonstrated wave amplification. New experiments are underway to study internal waves interacting with a critical level to determine if/when wave amplification can occur. This presentation will summarize preliminary results from these experiments.

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