

Abstract Submitted
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Can internal waves descend a double-diffusive staircase? SASAN GHAEMSAIDI, MIT, HAYLEY DOSSER, LUC RAINVILLE, University of Washington, THOMAS PEACOCK, MIT — Due to the rapid loss of ice cover, internal waves are expected to play an increasingly important role in the Arctic Ocean. As such, we present the results of a theoretical study investigating the role of double-diffusive layering, characteristic of the Arctic Ocean, on the fate of internal waves. We begin by considering the transmission properties of a single double-diffusive layer, from which we progress to consider multiple layers, and conclude with a realistic stratification. We investigate the possibility that double-diffusive layer structures can be efficient internal wave inhibitors, shielding the deep ocean from the transmission of momentum and energy flux associated with near inertial waves generated by passing storms.

Sasan Ghaemsaidi
MIT

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