

Abstract Submitted
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Subsurface Suppression of Turbulence in the Bay of Bengal¹

RAMA GOVINDARAJAN, RITABRATA THAKUR, International Centre for Theoretical Sciences Bengaluru, EMILY L SHROYER, CEOAS, Oregon State University, J THOMAS FARRAR, ROBERT A WELLER, Woods Hole Oceanographic Institution, JAMES N MOUM, CEOAS, Oregon State University — Quantifying the degree of turbulence, and mixing, in an ocean is important to understand how it responds to surface forces and distributes subsurface fluxes. The northern Bay of Bengal is highly salinity-stratified due to the discharge of numerous rivers and precipitation. From a year-long dataset of subsurface turbulent fluxes we show that it is not only surface forcing, but its interplay with an evolving complex subsurface stratification that determines the seasonality in turbulence. We observe a months-long suppression of turbulence below 40m when low-salinity water is present in the topmost layer (Thakur et al. "Seasonality and Buoyancy Suppression of Turbulence in the Bay of Bengal." *Geophysical Research Letters* 46.8 (2019): 4346-4355.), in spite of high winds. An implication is that the low mixing with deeper colder water can provide a heat source for tropical cyclogenesis. The stability reasons for this suppression will be discussed.

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