

Abstract Submitted
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Turbulent mixing in oceanic flows: challenges and insights for improved prediction¹ KARAN VENAYAGAMOORTHY, Colorado State University — The understanding and quantitative prediction of diapycnal (irreversible) mixing of density and momentum in the oceans remains an important ongoing challenge. From a practical perspective, there is a critical need to obtain accurate prediction of turbulent heat, mass and momentum fluxes using indirect measurements in the field. Indirect methods for estimating mixing rates typically rely on the inference of three key quantities namely: (i) the rate of dissipation of turbulent kinetic energy; (ii) the mixing efficiency, which is a measure of the amount of turbulent kinetic energy that is irreversibly converted into background potential energy; and (iii) the background density stratification, respectively. In this talk, an overview on how these quantities are typically inferred and/or parameterized will be presented. Some important challenges, ambiguities and new insights will also be presented with an eye toward improved prediction of ocean mixing.

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