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Small-scale intermittency estimations in isotropic homogeneous and anisotropic stably stratified turbulence SABA ALMALKIE, STEPHEN DE BRUYN KOPS, University of Massachusetts, Amherst — Small-scale intermittency in isotropic homogeneous and anisotropic stably stratified turbulence is examined using high-resolution direct numerical simulations. Statistics of the locally averaged energy dissipation and the scaling exponents of its moments are used as quantitative indicators of intermittency. For the isotropic homogeneous cases, the results are in good agreement with theory and experiments over a range of Reynolds numbers. For the stratified cases, the results help to explain the turbulent bursts observed in stratified flows at low Froude number. Additionally, intermittency estimations based on the single component of the strain rate tensor, a commonly used surrogate, are considered. The differences between the statistical characteristics of the locally averaged surrogate and those of the energy dissipation rate result in overestimating intermittency even in isotropic turbulence. The characteristics of the surrogate in the stratified turbulence are also investigated and the higher level of variability in intermittency estimations in geophysical flows is discussed.

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