A Lagrangian description of the energetics of stably stratified turbulence SEUNGBUM JO, KEIKO NOMURA, JAMES ROTTMAN, University of California, San Diego — The general equations describing the energetics of stratifed flows have been derived previously for a fixed volume in the Eulerian frame. Here we consider the energetics of a fluid particle in a homogeneous flow and develop appropriate equations in the Lagrangian frame. Comparison with Eulerian analysis is discussed. We then illustrate our results using Lagrangian statistics from DNS of homogeneous stably stratified shear flows which include decaying, stationary, and growing turbulence conditions.

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