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### **Direct Numerical Simulations of Stratified Turbulence**

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In the 1990's, computers became powerful enough to enable direct numerical simulations (DNSs) of turbulent flows which were fully consistent with laboratory data. Prior to that, low Reynolds number effects encouraged the belief that simulation results must be validated against physical measurements. Today, many researchers accept DNS as complimentary to laboratory data for studying engineering turbulence. We are now at a comparable breakthrough point with DNS of stratified turbulence. Whereas simulations with strong stratification just a few years ago could be run with a buoyancy Reynolds number,  $Re_b$ , of about 20, it is now practical to simulate flows with  $Re_b > 50$ , well beyond the value accepted for being relevant to the ocean or atmosphere. Statistics from DNS of forced homogeneous stratified turbulence run with 8.6 billion grid points are reported for a wide range of Froude numbers. Spectral energy balances are shown, as are the probability density functions of turbulent quantities. Preliminary results for runs with 69 billion points are also presented, along with an invitation for collaborative users of these data.