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**Turbulent structures in convection from a heated sidewall in a stratified fluid** KEATON BURNS, Massachusetts Institute of Technology, ANDREW WELLS, University of Oxford, GLENN FLIERL, Massachusetts Institute of Technology — We present direct numerical simulations of 2D turbulent convection along a heated vertical wall in a fluid with a stable background stratification. Our model considers a Boussinesq fluid with a constant background temperature gradient in a horizontally bounded and vertically periodic domain. The temperature along one sidewall is increased by a constant amount, driving an upward convective flow along the wall and introducing a potential-rise length scale to the system. We examine the resulting turbulent structures and statistics at and above Reynolds numbers of $10^5$, which lies in the range of well-developed turbulent heat transfer for the unstratified case. We also discuss the applicability of this system as a model of melt water flows alongside icebergs and ice shelves, and the potential emergence of convective layers without double-diffusion in geophysical scale problems, in contrast to the double-diffusive layering in laboratory models.

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