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Fluxes across double-diffusive interfaces: a one-dimensional-turbulence study ESTEBAN GONZALEZ-JUEZ, ALAN KERSTEIN, Sandia National Laboratories, DAVID LIGNELL, Brigham Young University — The parametrization of the fluxes of heat and salt across double-diffusive interfaces is of interest in geophysics, astrophysics, and engineering. The present work is a parametric study of these fluxes using one-dimensional-turbulence (ODT) simulations. Its main distinction is that it considers a parameter space larger than previous studies. Specifically, this work considers the effect on the fluxes of the stability parameter R_ρ, Rayleigh number Ra, Prandtl number, Lewis number, and Richardson number. The ratio Ra/R_ρ is found to be a dominant parameter. Here Ra/R_ρ can be seen as a ratio of destabilizing and stabilizing effects. Trends predicted by the simulations are in good agreement with previous models and available measurements.

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