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Spatial Dependence of Boundary Layers in Simulations of Rayleigh-Bénard Convection JANET SCHEEL, JORGE MUNOZ, Occidental College — We present results from a systematic study of the thermal and viscous boundary layers obtained from simulations of Rayleigh-Benard convection in a cylindrical container of aspect ratio one (diameter = depth). We extract local boundary layers at a variety of locations in the container for Rayleigh numbers between $1 \times 10^5 - 1 \times 10^9$ and for Prandtl numbers from $0.021 - 0.7$. We find some spatial dependence of boundary layer thicknesses, but these results highly depend on the method of extracting boundary layer thickness. We find similar results for the scaling of boundary layer thickness with Rayleigh number. This is an extension of our study of boundary layers performed in the center of the cell (J.D. Scheel et al., JFM, 2012). We compare our results to others, including the work by Wagner, et al., JFM, 2012.

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