Viscous and Thermal Boundary Layers in Simulated Turbulent Rayleigh-Bénard Convection JANET SCHEEL, ELISSA KIM, Occidental College — We present the results from numerical simulations of three-dimensional, fully turbulent Rayleigh-Bénard convection for cylindrical cells of aspect ratio 1 (diameter = depth). We use experimentally realistic boundary conditions, Prandtl numbers of 0.4 and 0.7, and Rayleigh numbers between 10^5 and 10^9. We focus on the thermal and viscous boundary layers, and compute profiles and boundary layer thicknesses in a variety of ways. We find that the different methods can effect the results. We also compare our results to experiments and theory.

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Date submitted: 05 Aug 2010   Electronic form version 1.4