

Abstract Submitted  
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**Patterns in cylindrical Rayleigh-Benard convection** KATARZYNA BORONSKA, LAURETTE S. TUCKERMAN, LIMSI-CNRS — We simulate the Boussinesq equations for Rayleigh-Bénard convection in a cylindrical container of aspect ratio  $radius/height=2$  and either perfectly insulating or perfectly conducting sidewalls. We investigate the phenomenon of coexisting stable states for a fluid with Prandtl number 6.7. Varying initial conditions, we obtain various convective patterns for the same Rayleigh number. The results for perfectly insulating sidewalls are in good agreement with experiment of Hof *et al.* We follow the stationary solutions using a steady-state solver and obtain a bifurcation diagram covering the range of Rayleigh numbers from convection onset up to  $Ra = 30\,000$ .

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