Patterns in cylindrical Rayleigh-Benard convection KATARZYNA
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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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