

## Multiplicity of Patterns in Cylindrical Convection

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The experiments of Hof, Mullin and Lucas on Rayleigh–Bénard convection in a cylindrical system are simulated numerically using a pseudospectral three-dimensional code. We confirm that for their parameter values, there exist multiple stable solutions. Starting from a perturbed conductive state, we obtain different final patterns, depending on the Rayleigh number. We then use these flows to initialize the simulations for other Rayleigh numbers. In this way we obtain many different stable solutions for the same Rayleigh number – two, three or four parallel rolls, a three-spoke pattern and even an axisymmetric state.

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