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*Transitions in an air-filled differentially heated rotating annulus*

We discuss the transition from axisymmetric to wave solutions in a mathematical model of an air-filled differentially heated rotating annulus. We use the Navier–Stokes equations in the Boussinesq approximation to model the flow of the air. An investigation of the double Hopf bifurcations that occur in the model indicate the existence of stable mixed azimuthal mode flows. The results for this near unity Prandtl number fluid are compared to those for larger Prandtl number fluids.