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Modulated rotating convection ANTONIO RUBIO, JUAN LOPEZ, Arizona State University, FRANCISCO MARQUES, Universitat Politècnica de Catalunya — Recent experiments in rotating convection have shown that the spatio-temporal bulk convective state with Küppers-Lortz dynamics can be suppressed by small amplitude modulations of the rotation rate. The resultant axisymmetric pulsed target patterns were observed to develop into axisymmetric modulated traveling roll states as the modulation amplitude and Rayleigh number were increased. Using the Navier–Stokes–Boussinesq equations with physical boundary conditions, we are able to numerically reproduce the experimental results and gain physical insight into the responsible mechanism, and relate onset of the traveling roll state to a saddle-node on an invariant circle bifurcation.

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