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Global Continua of Periodic Solutions of Differential Equations with State-Dependent Delay

We apply the recently developed global Hopf bifurcation theory to examine global continuation with respect to the parameter for periodic solutions of functional differential equations with a state-dependent delay. As major components toward this goal, we establish sufficient geometric conditions to ensure the uniform boundedness of periodic solutions and then prove the existence of rapidly oscillating periodic solutions by obtaining an upper bound of the period of the nontrivial periodic solutions in a connected bifurcation branch.