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Global Hopf Bifurcation in a Delayed Nicholson's Blowfly Equation

The dynamics of a Nicholson's Blowfly equation with a finite delay are investigated. We prove that a sequence of Hopf bifurcations occur at the positive equilibrium as the delay increases. Global extensions of local Hopf branches for large delays are proved using a degree-theoretic argument and a higher dimensional Bendixson criterion for ordinary differential equations.