

COLLOQUIUM

BOUNDED GLOBAL HOPF BRANCHES FOR THE NICHOLSON'S BLOWFLIES EQUATION WITH STAGE STRUCTURE

[ABSTRACT]

We investigate Nicholson's blowflies model with natural death rate incorporated into the delay feedback. We consider the delay as a bifurcation parameter and examine the onset and termination of Hopf bifurcations of periodic solutions from a positive equilibrium. We show that the model has only a finite number of Hopf bifurcation values and we describe how branches of Hopf bifurcations are paired so the existence of periodic solutions with specific oscillation frequencies occurs only in bounded delay intervals. The bifurcation analysis guides some numerical simulations to identify ranges of parameters for coexisting multiple attractive periodic solutions.



HONGYING SHU
TONGJI UNIVERSITY



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