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Abstract: This paper studies the behavior of a predator-prey model with switching and stage-structure for predator. Bounded positive solution, equilibria, and stabilities are determined for the system of delay differential equation. By choosing the delay as a bifurcation parameter, it is shown that the positive equilibrium can be destabilized through a Hopf bifurcation. Some numerical simulations are also given to illustrate our results.

Keywords: predator, prey, differential equation, model, stage structure, switching, bifurcation, stability.