

عنوان مقاله:

Stability analysis of a fractional order prey-predator system with nonmonotonic functional response

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خلاصه مقاله:

In this paper, we introduce fractional order of a planar fractional prey-predator system with a nonmonotonic functional response and anti-predator behaviour such that the adult preys can attack vulnerable predators. We analyze the existence and stability of all possible equilibria. Numerical simulations reveal that anti-predator behaviour not only makes the coexistence of the prey and predator populations less likely, but also damps the predator-prey oscillations. Therefore, antipredator behaviour helps the prey population to resist predator aggression.

کلمات کلیدی:

Bifurcation, Fractional Prey-predator model, Stability of equilibrium, Dynamical behavior, Limit cycle

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