Mathematics > Dynamical Systems

A global mathematical investigation of a predator-prey model

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We construct a global bifurcation diagram of the plane differential system $$\{l\} \dot x = x(1-x)-x\,y/(a+x^2), \dot y = y(\delta-\beta\,y/x), x(t) >0, y(t)>0, a>0, \delta>0, \beta>0,$$ which describes the predator-prey interaction.

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