Panic Behavior induces Multiple Endemic States and Backward Bifurcation

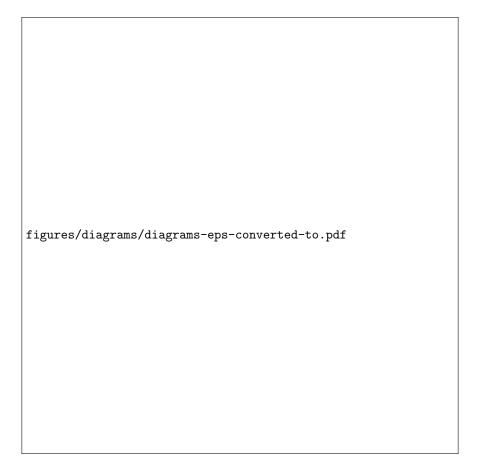David Benítez[1] and Ignacio Barradas[1]

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Abstract

This paper analyzes a SIS model for infectious diseases with two classes of individuals with different susceptibilities. It focuses in a transition function between both classes of susceptible individuals depending on the density of the infected population. A classification of all the possible bifurcation diagrams that the model can present is done. Specifically, some conditions for the simultaneous existence of backward bifurcation and multiple endemic states are shown.

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