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An SIS Epidemic Model with Stage Structure and a Delay

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收稿日期   修回日期   网络版发布日期   接受日期

摘要   A disease transmission model of SIS type with stage structure and a delay is formulated. Stability of the disease free equilibrium, and existence, uniqueness, and stability of an endemic equilibrium, are investigated for the model. The stability results are stated in terms of a key threshold parameter. The effects of stage structure and time delay on dynamical behavior of the infectious disease are analyzed. It is shown that stage structure has no effect on the epidemic model and Hopf bifurcation can occur as the time delay increases.

关键词   SIS epidemic model   threshold   globally asymptotically stable
分类号

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