

Asymptotic behaviors of stochastic epidemic models with jump-diffusion

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Tóm tắt nội dung

In this talk, we classify the asymptotic behavior for a class of stochastic epidemic models represented by stochastic differential systems where the Brownian motions and Lévy jumps perturb to the linear terms of each equation. We construct a threshold value between permanence and extinction and develop the ergodicity of the underlying system. It is shown that the transition probabilities converge in total variation norm to the invariant measure. Our results can be considered as a significant contribution in studying the long term behavior of stochastic differential models because there are no restrictions imposed to the parameters of models. Techniques used in proving results of this paper are new and suitable to deal with other stochastic models in biology where the noises may perturb to nonlinear terms of equations or with delay equations.

Tài liệu

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