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ABSTRACT | José Martins

Title

From the moment closure to the quasi-stationarity in the SIS model

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Abstract

The stochastic SIS model is a well known mathematical model, studied in several contexts. In an epidemiological context, many authors worked on the SIS model considering, only, the dynamical evolution of the mean value and the variance of the infected individuals. In this study, we derive recursively the dynamic equations for all the moments, using the moment closure method, and we derive the stationary states of the state variables. We discover that the steady states give a good approximation of the quasi-stationary states of the SIS model not only for large populations of individuals but also for small ones and not only for large infection rate values but also for infection rate values close to its critical values.