

Asymptotic approximations of the first few cumulants of the stochastic SIS model

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ABSTRACT. We investigate the quasi-stationary distribution of the stochastic SIS-model with demography and conventional infection rate. We describe an improved method that leads to asymptotic approximations of the first few cumulants of this model.

Keywords. Stochastic SIS-model with demography and conventional infection rate, moment closure, quasi-stationary distribution, diffusion approximation, asymptotic approximation, kolmogorov forward equations, cumulant generation function.