

Asymptotic results for epidemic processes on finite populations

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We consider a stochastic epidemic SIR model assuming there is no latent period, that is, one infected can transmit the infection at the moment of being infected. The model is considered with an initial configuration of susceptible and infected individuals and the study is focused on the random variable “size of the epidemic”, which is defined as the difference between the number of susceptible individuals at the start and at the end of the propagation of the epidemic. This work has as objective to find bounds for the probability that the size of the epidemic does not exceed certain proportion of the initial number of susceptible individuals. The methods used to find these bounds are analysis of the embedded chain and the stochastic comparison.

References

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