

1086-92-238

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In this talk we consider a classical stochastic epidemiological model of SIR type with several types of susceptibles. In addition to the well-studied distribution of the final epidemic size, the important quantities of the probability of the major outbreak and the distribution of the length of an epidemic are studied both analytically and by means of Monte Carlo simulations. The results are compared to those of a simplest homogeneous SIR model. (Received August 11, 2012)