DYNAMICS OF A STOCHASTIC SIRI EPIDEMIC MODEL WITH RELAPSE AND MEDIA COVERAGE

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In this talk we will report first on the existence and uniqueness of global positive solutions for a stochastic SIRI epidemic model with relapse and media coverage. Our main emphasis will be on the study of the dynamical properties of the solution around both disease-free and endemic equilibria points of the deterministic model. Furthermore, we will also show the existence of a stationary distribution and will provide some numerical simulations to illustrate the theoretical results. Furthermore, we will also provide some insight about the dynamics of the model when some parameters in the deterministic model are perturbed but some real noise, modeled as a bounded function of an Ornstein-Uhlenbeck process, making use of the theory or random dynamical systems.