

Abstract Submitted
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Stochastic amplitude scaling in time dependent population models¹ IRA SCHWARTZ, ERIC FORGOSTON, US Naval Research Laboratory — We consider the problem of stochastic fluctuations in time-dependent populations modeling SEIR-type epidemic outbreaks. Stochastic model reduction is used to explore the fluctuations in dynamics when contacts in the population are seasonal. The scaling effects of noise-induced outbreak amplitudes are derived in terms of biological and social parameters, and explored in mean-field models. The theory is applied directly to spatio-temporal data to: 1: Construct the dynamics of unobserved asymptomatic individuals. 2. Show the scaling effects of fluctuations on the asymptomatic exposed population.

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