

**Gray, Alison; Greenhalgh, David; Mao, Xuerong; Pan, Jiafeng**  
**The SIS epidemic model with Markovian switching.** (English) Zbl 1271.92030  
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This paper first examined a SIS epidemic model with Markovian switching of two states and presented its explicit solution. This paper also established the conditions for extinction and persistence and compared them with the corresponding conditions for the deterministic SIS epidemic models. Then the paper extended these results for two-state Markovian chains to a finite-state Markovian chain. The paper contains many useful probabilistic computations.

Reviewer: [Fuke Wu \(Wuhan\)](#)

**MSC:**

- [92D30](#) Epidemiology
- [60J20](#) Applications of Markov chains and discrete-time Markov processes on general state spaces (social mobility, learning theory, industrial processes, etc.)
- [92-08](#) Computational methods for problems pertaining to biology

Cited in **1** Review  
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**Keywords:**

[Markovian switching](#); [extinction](#); [persistence](#); [environmental noise](#)

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