Necessary and Sufficient Conditions for Convergence of First-Rare-Event Times for Perturbed Semi-Markov Processes

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Abstract

Necessary and sufficient conditions for convergence in distribution of first-rare-event times and convergence in Skorokhod J-topology of first-rare-event-time processes for perturbed semi-Markov processes with finite phase space are obtained.

Key words: Semi-Markov process, First-rare-event time, First-rare-event-time process, Convergence in distribution, Convergence in Skorokhod J-topology, Necessary and sufficient conditions.

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