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Asymptotic Expansions for Stationary Distributions of Perturbed Semi-Markov Processes

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Abstract

New algorithms for computing of asymptotic expansions for stationary distributions of nonlinearly perturbed semi-Markov processes are presented. The algorithms are based on special techniques of sequential phase space reduction, which can be applied to processes with asymptotically coupled and uncoupled finite phase spaces.

Key words: Markov chain, Semi-Markov process, Nonlinear perturbation, Stationary distribution, Expected hitting time, Laurent asymptotic expansion.

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