STRONG ERGODICITY CONVERGENCE RATE OF MARKOV PROCESS WITH APPLICATION TO SPECTRAL THEORY

Yong-Hua MAO *Beijing Normal University, Beijing.* E-mail: maoyh@bnu.edu.cn

Abstract: We estimate the convergence rates in strong ergodicity by the exponential convergence rate and the uniform moment of hitting time for Markov processes. For the reversible Markov process, this estimate can be done only by the uniform moment of hitting time for Markov processes. For the birth and death process and the one-dimensional diffusion process, we prove that the spectra in $L^p(\pi)$ spaces are same and discrete once the processes are strongly ergodic, and the variational formulas the convergence rates in strong ergodicity are derived in the same way as the spectral gaps.