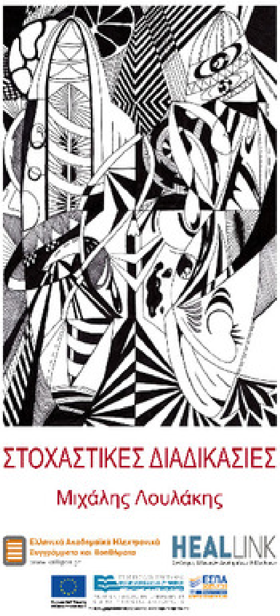

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Abstract

This book is an introduction to stochastic processes with emphasis on discrete time-discrete space Markov chain. We study transient and asymptotic properties of Markov chains using potential theory and martingale theory and we present applications in Stochastic simulation (Markov Chain Monte Carlo), stochastic optimization (simulated annealing) and other sciences. The basic properties of Poisson processes are also studied.

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