

Inn'formal Probability Seminar

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“Boundary behaviour of branching Markov chains”

Abstract

We study branching Markov chains (i.e., the synthesis of Markov chains and Galton-Watson processes) on denumerable state spaces in discrete time. It is supposed that the associated Markov chain is transient and irreducible. Given the population at time n at the different states, we normalize it by dividing by its total number. The resulting empirical distribution is a random probability measure on the state space. Assuming that the latter is equipped with a "geometric" compactification with a boundary at infinity, a main focus is on the question whether the sequence of empirical distributions converges a.s. weakly to a random probability distribution on the boundary. Generalisations concern multitype branching, dropping the assumption of independence between branching and motion. This is joint work with Vadim A. Kaimanovich (Ottawa), to appear in *Ann. Inst Poincare' Prob. Stat.*

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