Seminar of Probability and Stochastic Process

Thursday, 6th February, from 11h00
MA A1 12, EPFL, Ecublens

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Harmonic functions and stationary distributions for asymptotically homogeneous transition kernels on Z^+

Abstract:

We discuss a method for constructing positive harmonic functions for a wide class of transition kernels on Z^+. We also present natural conditions under which these functions have positive finite limits at infinity. Further, we show how these results on harmonic functions may be applied to asymptotically homogeneous Markov chains on Z^p with asymptotically negative drift. More precisely, assuming that Markov chain satisfy Cram\'er's condition, we demonstrate the tail asymptotics of the stationary distribution.

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