Moments of Recurrence Times for Markov Chains

Michael Scheutzow
Technische Universität Berlin

Resumo:
It is well-known that if for an irreducible discrete time Markov chain with countable state space, the recurrence time for some state has a finite first moment, then the same is true for every state. Kai Lai Chung showed in the 1950-es that the same is true for all polynomial moments and asked for which general moments – defined via an increasing function $f$ – this property holds true. We provide an explicit description of all positive non-decreasing functions for which the property holds. This is joint work with Frank Aurzada, Hanna Döring, and Marcel Ortgiese.