
All-time statistics of the fluxes

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Abstract

We discuss an exact expression for the statistics of the fluxes of Markov jump processes at all times, improving on asymptotic results from "level 2.5" large deviation theory. The main results are obtained by application of the BEST theorem in enumerative graph theory. We further digress on connections of the methods employed with concepts from the quantum theory of gauge fields, on certain subtleties arising in the treatment of continuous-time Markov jump processes, and on possible applications to the finite-time study of efficiency fluctuations.

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