

MA T H E M A T I C A L P H Y S I C S S E M I N A R

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Large deviation principle of the empirical current for Markov processes

Abstract

We consider a continuous time Markov chain on a countable state space and extend the classical Donsker-Varadhan large deviation principle for the empirical measure by considering also the empirical flow. We then discuss the application to the Gallavotti-Cohen functional, whose associated large deviation principle can be obtained by projection. We finally illustrate briefly the analogous results for diffusion processes on $\mathbb{R}^n$.