
Nonequilibrium Markov processes conditioned on large deviations I

Hugo Touchette*¹

¹National Institute for Theoretical Physics (NITheP) – South Africa

Abstract

I will present a general approach for constructing a Markov process - called the effective or driven process - that describes the dynamics of a nonequilibrium process when one or more observables of this process are observed to fluctuate in time away from their typical values. The driven process is related to nonequilibrium generalizations of the microcanonical and canonical ensembles, and can also be seen as a generalisation of the concept of fluctuation paths, actively used since Onsager and Machlup (and later Freidlin and Wentzell) to describe noise-activated transitions. Other applications in nonequilibrium statistical physics and the simulation of large deviations will be discussed. This is joint work with Raphael Chetrite (Université de Nice, France).

*Speaker