Gallavotti-Cohen fluctuation relation in infinite dimension

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Abstract

The Gallavotti-Cohen fluctuation relation is a general asymptotic result about the probability of rare events under a given deterministic or stochastic dynamics. Roughly speaking, it says that, in the stationary regime, the probability of observing a negative value for the time average of the entropy production is exponentially small compared to that for the opposite value. Due to contributions of Kurchan, Lebowitz-Spohn, Maes and many others, Gallavotti-Cohen fluctuation relation is rather well understood for many finite-dimensional stochastic systems. In this talk, we shall describe some recent results concerning the fluctuation relation in the infinite-dimensional case and discuss an example of its failure.

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