

CLT for NESS

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Non-equilibrium stationary states (NESS) are ubiquitous in nature, and a fundamental problem in mathematical physics is to find a mathematically sound description of NESS. Approximating physical systems by Markov chains, questions about NESS can be restated as questions about invariant measures of non-reversible Markov chains. In this way, probabilistic methods become available to tackle some of these questions. For well-chosen interacting systems, some precise answers, in the form of central limit theorems (CLT) in functional spaces are available. The corresponding scaling limits of the are given by solutions of SPDEs, and the NESS are asymptotically described by the invariant measures of these SPDEs. In some simple cases, the SPDE can be solved and complete answers can be given.

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