Large deviation estimators and their efficiency

Hugo Touchette[*1]

[1]Stellenbosch University – South Africa

Abstract

Large deviation theory made its way into statistical physics as a mathematical framework for studying equilibrium systems and is now increasingly used for studying nonequilibrium systems driven in steady states, quantum many-body systems, and disordered systems. Since only a few of these systems can be approached analytically, many numerical methods have been devised over the years to compute the central quantity of this theory - the rate function - characterising the exponential decay of probabilities in the thermodynamic or in the long-time limit. In this talk, I will describe some of these methods and their efficiency, focusing on those based on importance sampling.

Keywords: Large deviations, importance sampling

---

[*]Speaker