LANGEVIN-BASED SAMPLING SCHEMES

GRIGORIS PAVLIOTIS

I will present an overview of the use of Langevin dynamics for sampling from probability distributions. I will explain how we can construct stochastic dynamics that is ergodic, or even reversible, with respect to a given target probability distribution. I will also discuss about how we can compare different Langevin-based schemes in terms of their performance as sampling schemed. In addition, preconditioning methodologies for improving the performance of Langevin samplers will be presented. Finally, the use of interacting particle systems and of ensemble methodologies for sampling will be elucidated.