



Minisymposium 7 - Stochastic algorithms and Markov processes

Convergence of sequential MCMC methods

ANDREAS EBERLE, CARLO MARINELLI (BONN)

We study convergence properties of a class of stochastic algorithms for Monte Carlo integral estimation w.r.t. probability distributions, which combine elements of Markov chain Monte Carlo methods and importance sampling/ resampling schemes. We develop an analysis by functional inequalities for an associated nonlinear flow of probability measures. This allows us to prove that the combined methods are sometimes converging rapidly in multimodal setups where traditional MCMC methods mix extremely slowly. For example, we can prove rapid convergence in the mean field Ising model at all temperatures.