

Abstract

The empirical likelihood Bayesian is an alternative to the traditional parametric Bayesian procedures. Research has shown that empirical likelihood methodology can replace the parametric counterpart to construct the posterior distribution. However, the posterior distribution constructed from an empirical likelihood does not have an analytical form. Hence methods like Markov Chain Monte Carlo (MCMC) needs to be employed to draw samples from this posterior.

I developed an R package for drawing samples from such empirical likelihood based posterior using a type of MCMC method, namely Hamiltonian Monte Carlo (HMC). The HMC algorithm adopts the physical system mechanic to propose the next state of the Markov Chain instead of just using a probability distribution. The result is a MCMC method that converges faster and more efficiently.