

Abstract

This paper presents a comparison between two adaptive Markov chain Monte Carlo methods: An adaptive Metropolis-Hastings algorithm proposed by Griffin and Walker, section 2.1 [2], and an MCMC substitution method proposed by Chan & Lai [3]. The algorithms of the two methods are presented together with some proves of the time reversibility property that the Markov chain generated has. Several diagnostic tests are described in detail and used to compare the two methods. They include trace plots, autocorrelation diagnostic, Gelman & Rubin diagnostic and Monte Carlo error diagnostic using Non-Overlapping Batch Means method. The comparisons are made using codes and graphs generated using the statistical software R and its packages. Finally, the paper recommends some further work that can be done to improve the analysis.