

# Introduction to MCMC Methodology in Bayesian Statistics

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This is a short tutorial introducing the principles of MCMC methodology using R examples. First, the Metropolis-Hastings algorithm is introduced. Then, the Gibbs Sampler is motivated using its relation to the slice sampler. Some additional examples on credible interval estimation are also provided. The examples are concluded with two case studies on relevant applications of the Gibbs Sampler: The use on a mixture model and its implementation as hybrid Gibbs sampler.

These pages are merely giving an impression on how to implement the aforementioned algorithms. A detailed derivation, thorough discussion and a plethora of exercises and examples is given in Robert & Casella (2004): Monte Carlo Statistical Methods.

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