

The authors present two new approaches to Markov chain sampling. The idea is to handle non-conjugate priors with Metropolis-Hastings with the conditional prior as the proposal distribution. A variation of this method can sometimes sample more efficiently, when combined with partial form of Gibbs sampling. The second method uses Gibbs sampling in a space with auxiliary parameters, yielding an algorithm that resembles use of a Monte Carlo approximation to the necessary integrals, but which does not suffer from any approximation error. What happens when the algorithm employs auxiliary ϕ parameters but fails to discard the unused ϕ values when computing the conditional distribution for η ? What cost is there to using algorithms that do not rely on the prior being conjugate.