

Group Solution - Sheet 11

July 12, 2017

MCMC - Markov Chain Monte Carlo

- Complex Distributions, Multidimensional Grid of Parameters
- $f(\sigma^{(i)}|\sigma^{(i-1)})$
- Independence of initial conditions

Problem 1 - MCMC implementation for baryon acoustic oscillations

0.1 Theory

1. at $t=0$, initial condition
2. generate a Vector of initial Parameters $\Theta^{(i)}$
3. REPEAT:
 - a) $t++$
 - b) generate a proposal Θ^* from $f(\sigma^{(T+1)}|\sigma^{(T)})$
 - c) estimate $\alpha = \min\{1, f(\Theta^*)\}$
 - d) $u = \text{unif}(0, 1)$
 - e) if $u < \alpha$ accept the new proposal