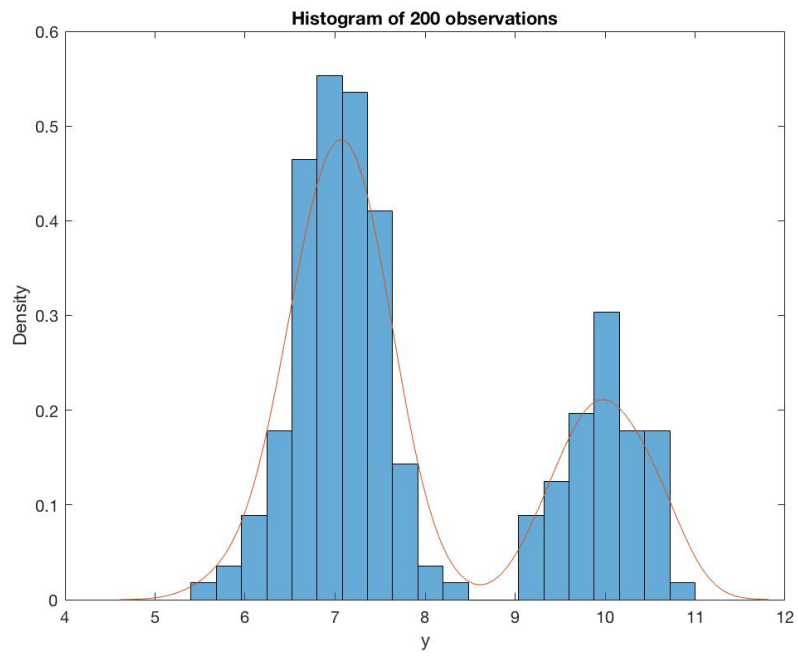
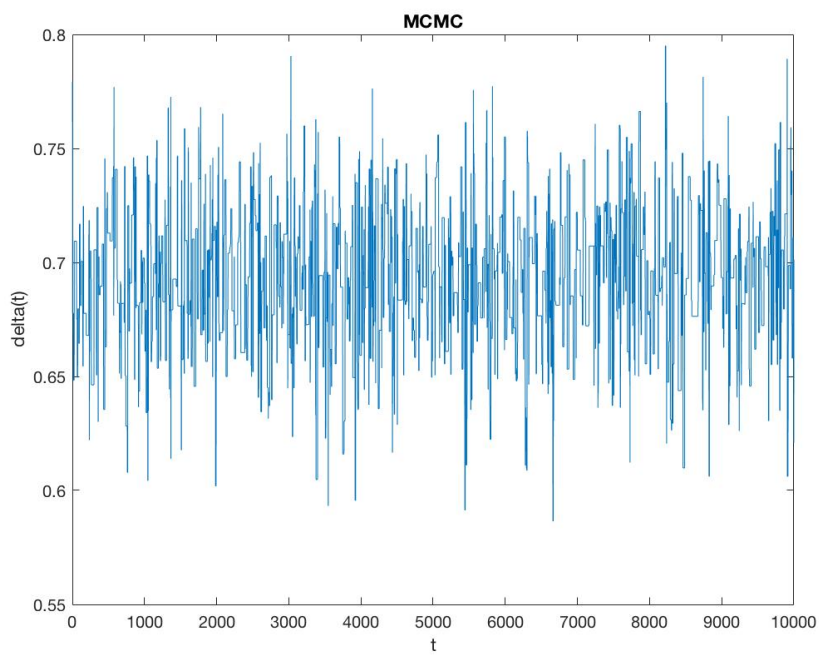


Problem 7.1: Gundala_7_1.m

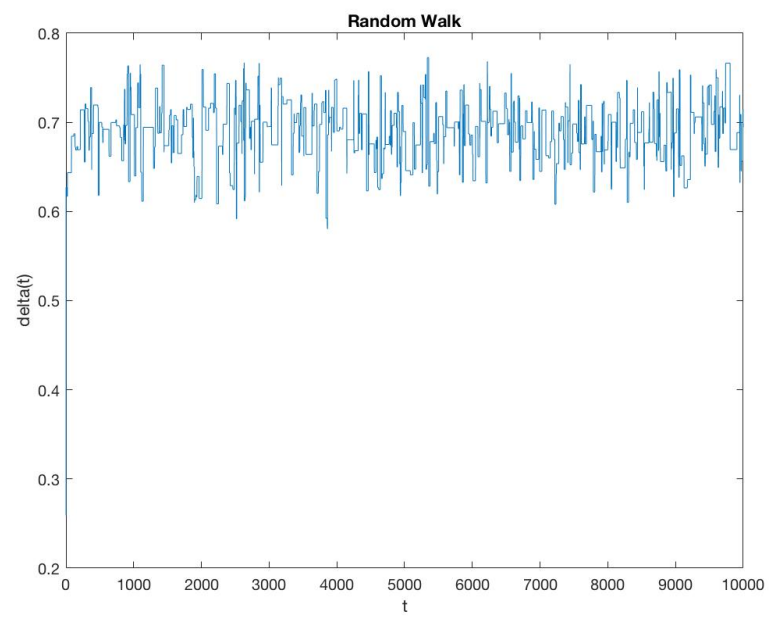
a.



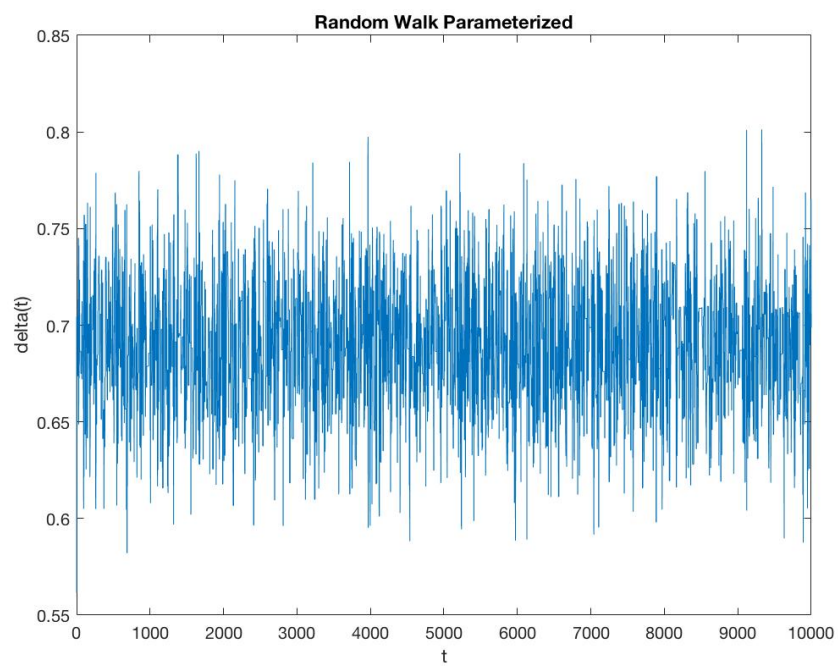
b.



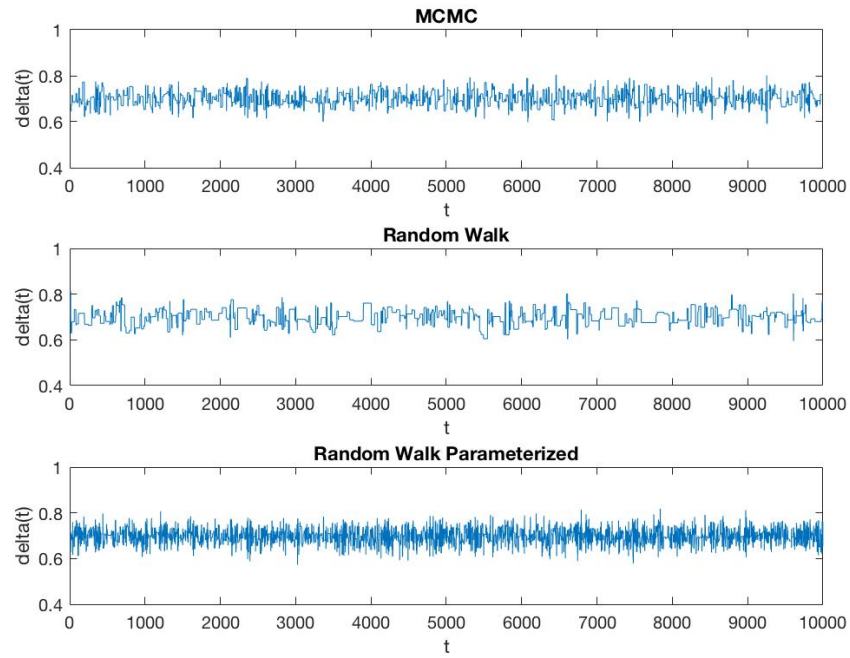
c.



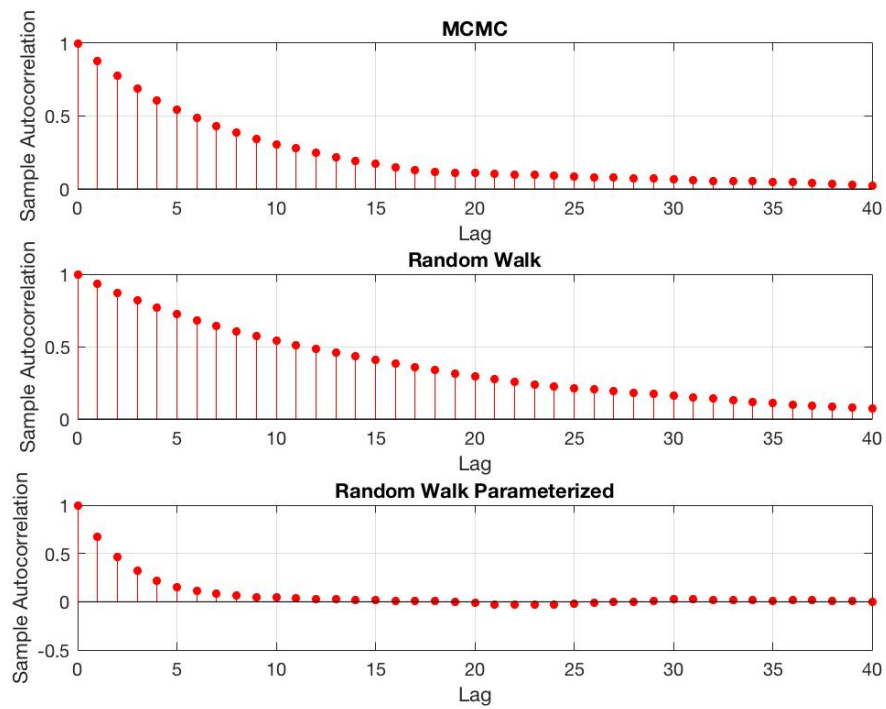
d.



e. Estimates:



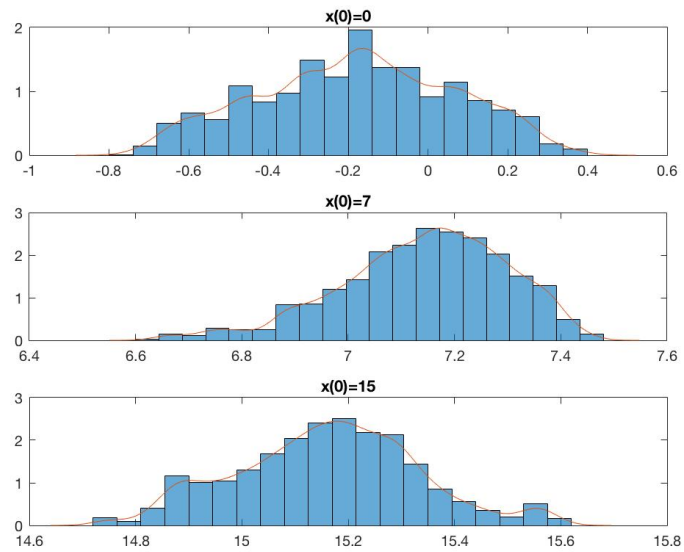
Convergence:



clearly, Random Walk Re-parameterized is better than other 2 algorithms.

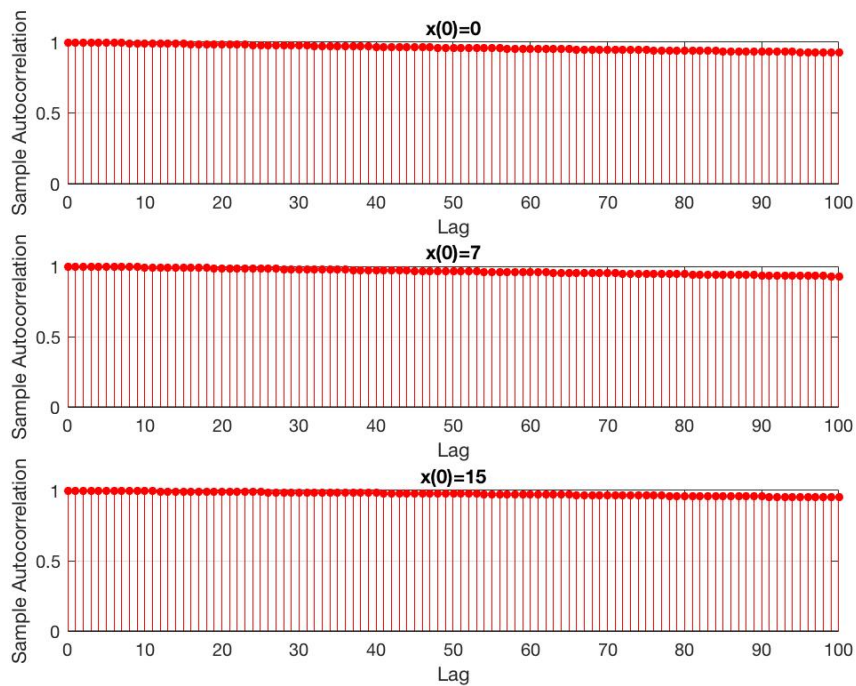
Problem 7.2 : Gundala_7_2.m

a.

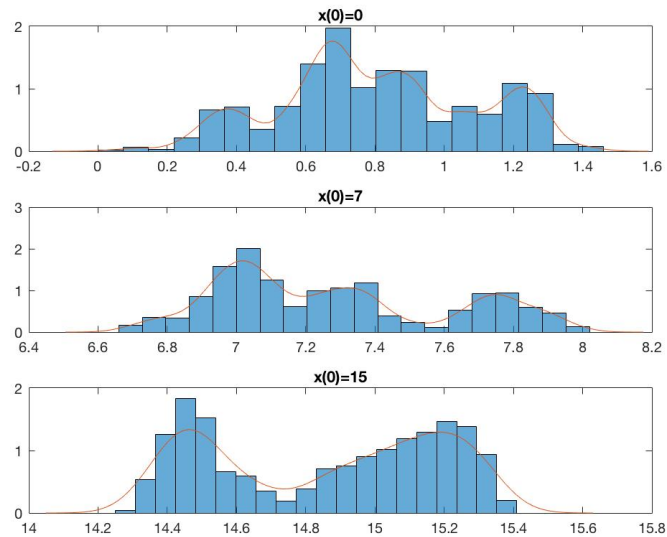


The mean values of the histograms approximate closer to their true values with difference of about 0.2. The chain doesn't follow a good normal distribution.

Convergence behavior for $x = [0, 7, 15]$

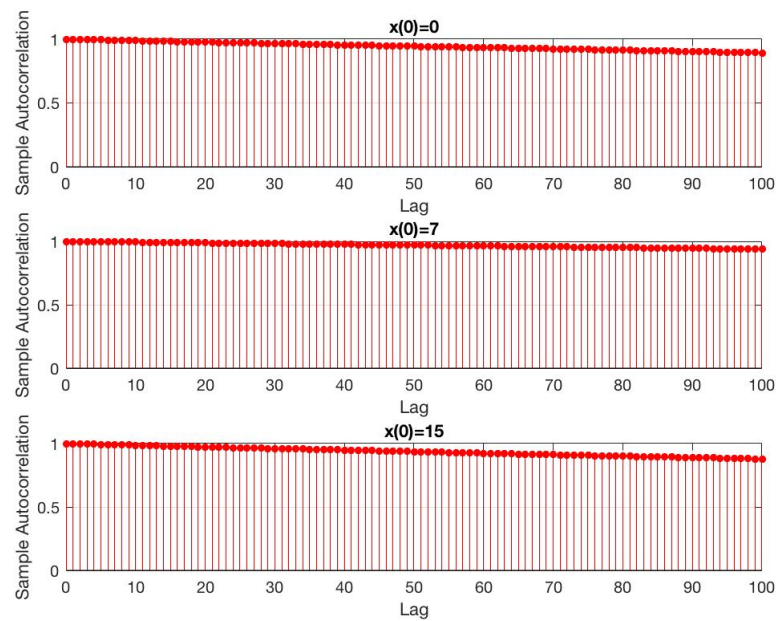


New proposal distribution: $N(x^t, 0.5^2)$



The mean values of the histograms are not approximated to their true values as in the above scenario. The chain doesn't follow a good normal distribution

Convergence behavior:



The convergence behavior is almost similar to old distribution but a little better at $x(0) = 15$ for new distribution.