**MCMC Algorithm settings**

To test MCMC with a simple Carbon balance model:

Setting lower and upper bounds of the prior parameter pdf, and start point of the chain [lower value, starting value, upper value]:

k = [0.1,0.55,1]

af = [0,1/7,0.35]

as = [0.2,3/7,0.75]

sf = [0,1/30,1/10]

Generate synthetic data for GPP, Rd, Cstorage with Mean and SD:

GPP (with mean=15, sd=3)

Rd (with mean=4, sd=0.8)

Cstorage (with mean=7.5, sd=2), just to create a measurement sets of Cleaf, Cstem, Croot

Using random parameter sets within the lower and upper bounds calculate Cleaf, Cstem, Croot to form synthetic data sets and uncertainties associated with these data

Perform MCMC algorithm with a prior probability distribution for the parameters and a likelihood function

Get a representative sample of parameter sets (k1,…..,kn; ….) where n = length of chain­­­