Class 19 - MCMC

Fun with Monte Carlo Markov Chains:

Problem 19.1: Write a simple MCMC to fit the data from linfit_data.npz to the linear function

$$f(\vec{x}|\vec{a}) = a_0 + a_1\vec{x}. \tag{1}$$

Plot up the joint posterior probability distribution for the two parameters as well as marginalized posterior probabilities for each parameter.

Problem 19.2: Write a simple MCMC to fit the data from gaussfit_data.npz to the gaussian function

$$f(\vec{x}|\vec{a}) = a_0 + a_1 e^{-\frac{1}{2}\left(\frac{x-a_2}{a_3}\right)^2} \tag{2}$$

Plot up the joint posterior probability distribution for the different parameter combinations and determine the 95% confidence intervals.