STAT 153 & 248 - Time Series
Lab One

Spring 2025, UC Berkeley

January 23, 2025

Part 2: Bayesian inference in a simple estimation problem

Problem 1. *Suppose we have six observations*

$$Y_1 = 26.6, Y_2 = 38.5, Y_3 = 34.4, Y_4 = 34, Y_5 = 31, Y_6 = 23.6,$$

which we model as

$$Y_1, \ldots, Y_6 \overset{i.i.d}{\sim} N(\theta, \sigma^2),$$

where θ and σ^2 are unknown parameters. Conduct Bayesian inference on the unknown parameters θ and σ^2. Note that the answer depends on your choice of priors for θ and σ^2.

Suggestion. *Try using the following priors*

$$\theta, \log \sigma \overset{i.i.d}{\sim} \mathit{Unif}(-C, C)$$

with a large constant C, as in the last lecture.