$\theta_i \overset{iid}{\sim} N(0, \tau)$

$Y_i = \theta_i + \varepsilon_i \qquad \varepsilon_i \overset{iid}{\sim} \theta_i$

$abs(Y_i) > 2\sigma$

$\hat{\theta}_{bayes,i} = \dfrac{y_i/\sigma^2}{1/\sigma^2 + 1/\tau^2}$ & $\hat{\sigma}_{bayes} = \sqrt{\dfrac{1}{\frac{1}{\sigma^2}+\frac{1}{\tau^2}}}$

posterior mean, sd

Prior is $\theta_i \sim N(0, \tau)$

$Y|\theta_i \sim N(0, \sigma^2)$

& $\theta_i|Y_i \sim \cdots$

$p(\theta_i|Y_i) \propto p(Y_i|\theta_i)p(\theta_i)$

$\exp\left(-(Y_i-\theta_i)^2/2\sigma^2\right) \exp(-\theta_i^2/2\tau^2)$

$\hat{\sigma}^2$ need sto be sequence

Lindeberg CLT for triangular arrays