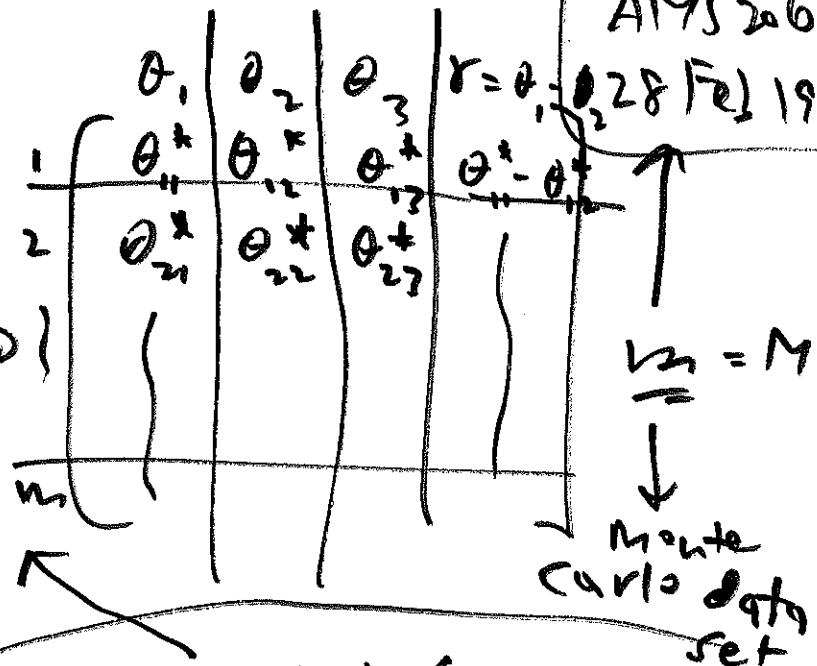


today: MCMC
 next time: hierarchical models

AM5206
 28 Feb 19



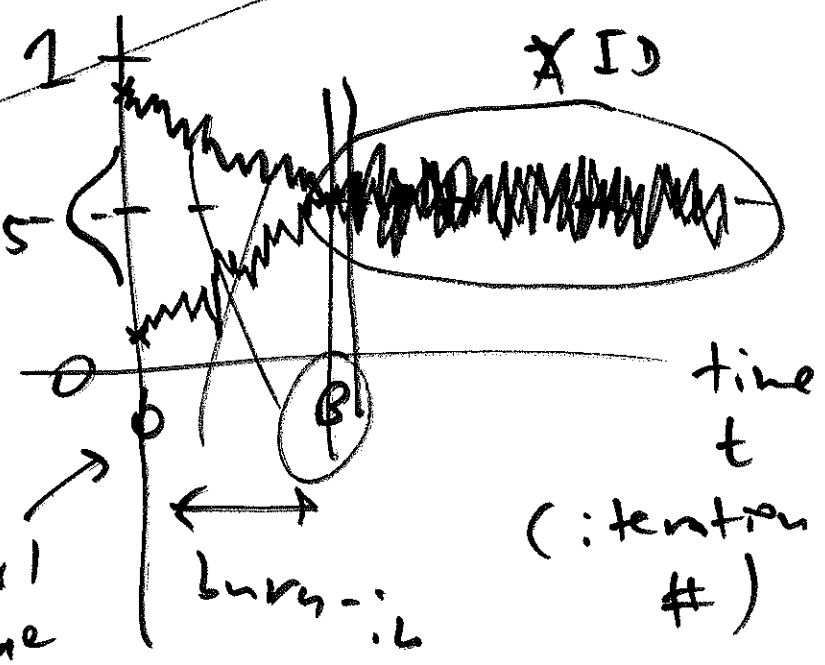
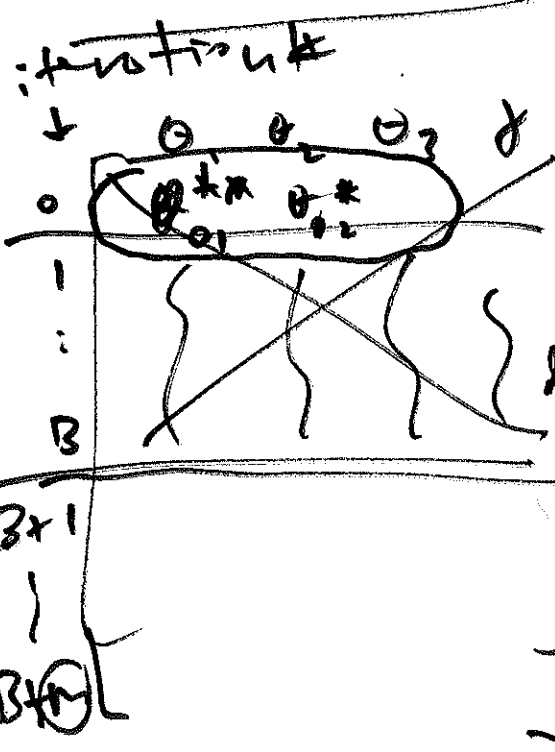
$\theta = (\theta_1, \theta_2, \theta_3)$
 $\delta = \theta_1 - \theta_2$

$p(\theta_1 | \mathcal{D}, B, \mathcal{D})$

Dirichlet ($\alpha + N_1, \alpha + N_2$)

$= \iint p(\theta_1, \theta_2, \theta_3 | \mathcal{D}, B) d\theta_2 d\theta_3$

$p(\delta | \mathcal{D}, B) = ?$



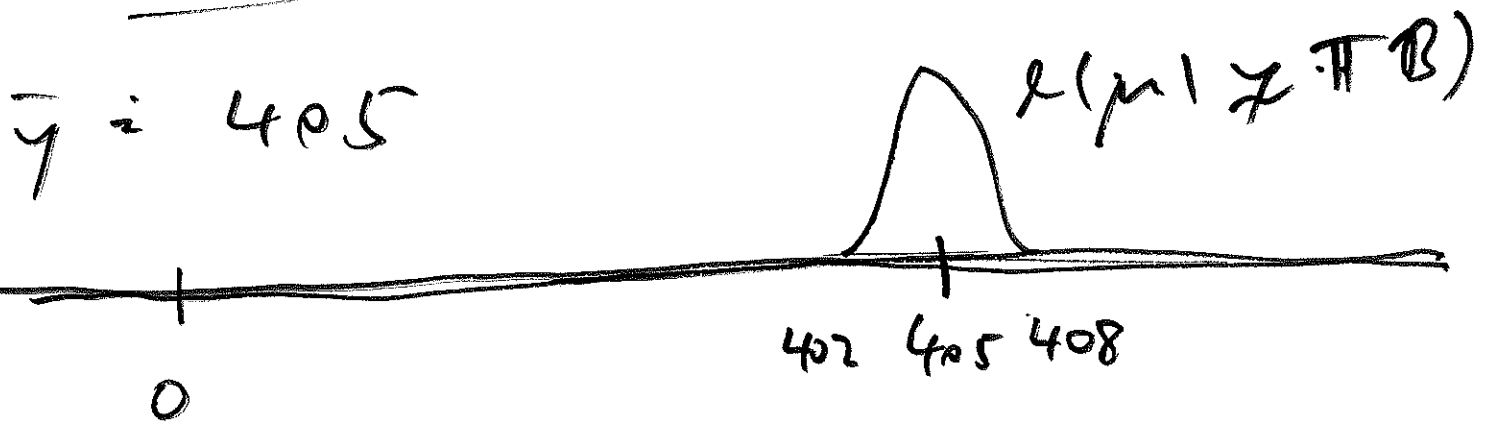
monitoring
 $S = \{ \theta = (\theta_1, \theta_2, \theta_3) : 0 < \theta_j < 1, \sum \theta_j = 1 \}$

$$p(\theta \sim | y \dots \mathcal{B}) = \textcircled{C} \boxed{p(\theta \sim | \mathcal{B}) / \ell(\theta \sim | y \dots \mathcal{B})} \quad \textcircled{2}$$

$$(\mu \sigma r | \dots \mathcal{B}) \sim p(\mu \sigma r | \dots \mathcal{B})$$

$$(\Gamma_i | \mu \sigma r \Pi \mathcal{B}) \stackrel{\text{IID}}{\sim} t_r(\mu, \sigma^2)$$

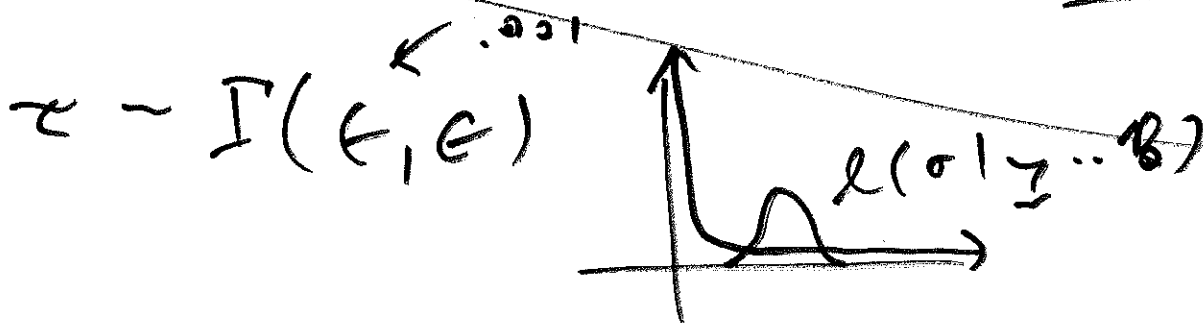
$$(i = 1, \dots, 4)$$



$\mu \sim N(0, \text{tiny precision})$

$$\tau = \frac{1}{\sigma^2} = 10^{-6}$$

$$\sigma = 1000$$



$$r < 2 \quad v(t_r) = 0$$

③

