

E2 $(1/4, \dots)$ MH to sample π^* want cheap
proposal

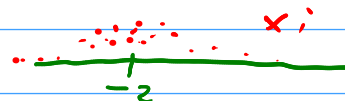
1. $\begin{matrix} \text{proposal} \\ \nearrow \\ \tilde{x} \rightarrow x^* \end{matrix}$ (can be ind. of π^*)

want
high
acceptance
rate

2. MH - Accept/reject
(accept with a prob. which is influenced by π^*)

 \Rightarrow Chain has inv. distr π^* E3How to define prior marginal w_0 :
Two ways:(1) x_i samples from Prior and def(80% examp'l $N(-2, 1/2)$)

$$\text{Prior} \approx \mu_{\text{prior}} = \frac{1}{M} \sum_{i=1}^M \delta_{x_i}$$

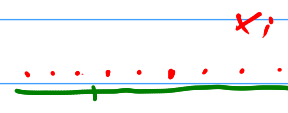
 \rightarrow all x_i have weight $\frac{1}{n}$

$$\rightarrow w_0 = \begin{pmatrix} 1/n \\ 1/n \\ \vdots \\ 1/n \end{pmatrix}$$

(2) x_i a grid on \mathbb{R}

$$\text{d}x \approx \tilde{\mu} = \frac{1}{M} \sum \delta_{x_i} \quad \text{samples}$$

uniform distr.
not prior



$$\text{Prior} \approx \mu_{\text{prior}} = \sum \delta_{x_i} w_i \quad w_i \sim \text{pdf}(\text{Prior}) dx$$

$$w_0 = \begin{pmatrix} w_1 \\ w_2 \\ \vdots \end{pmatrix}$$

Posterior \approx Likelihood \cdot Prior

(1) x_i are from prior

$$\mu_{\text{post}} = \sum_{\substack{x_i \\ \text{prior}}} \delta_{x_i} w_i$$

$w_i \sim \text{Likelihood}$

(2) x_i on grid

$$\mu_{\text{post}} = \sum \delta_{x_i} w_i$$

$w_i \sim \text{pdf}(\text{Prior}) \text{ Likelihood}$

$$P(x|y) \propto \frac{P(x,y)}{P(y)}$$