





$X_j$



$X_j^*$





$X_j$

A large, solid red circle serves as the background for the entire image.

$\tilde{X}_j$





$X_j$

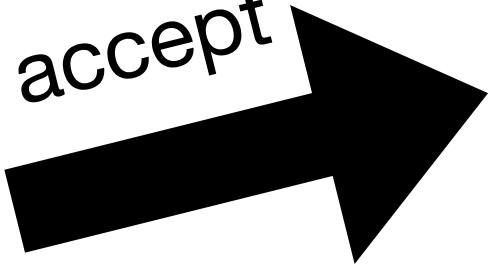


A large, solid red circle serves as the background for the entire image.

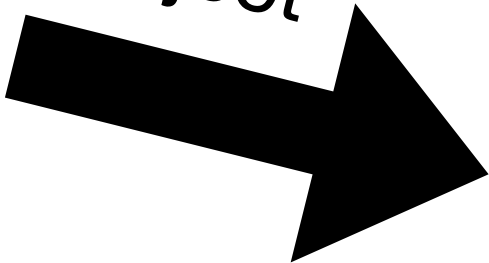
$\tilde{X}_j$



accept



*reject*





$X_j$



$X_j^*$





$X_j$



A large, solid red circle serves as the background for the entire image.

$\tilde{X}_j$





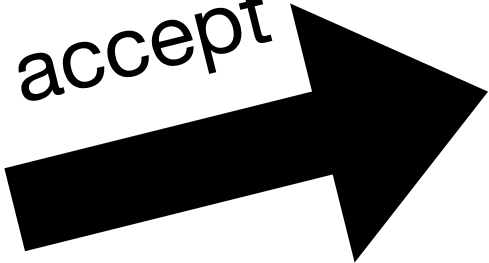
$X_j$

A large, solid red circle serves as the background for the entire image.

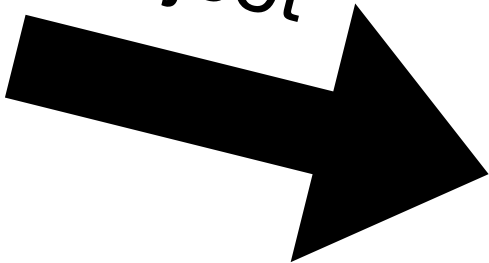
$\tilde{X}_j$



accept



*reject*



is an effective in MC MC



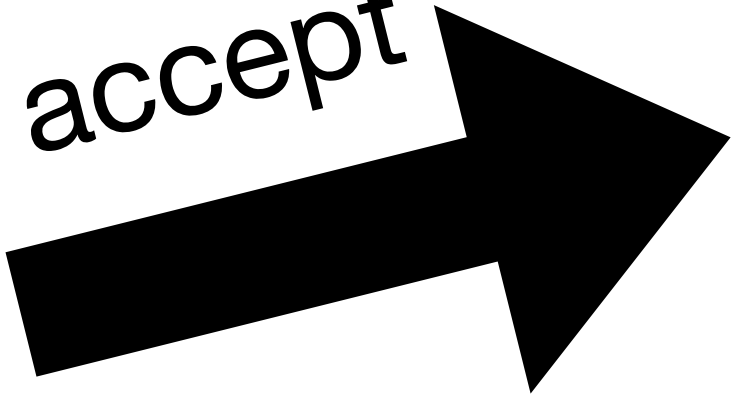
• only have one step

Recall: want dependence between  $\tilde{X}_j$  and  $X_j$ . low for power

- if proposal too close,  $\tilde{X}_j$  must be close to  $X_j$ .

- if rejection rate high,  $\tilde{X}_j$  close to  $X_j$  most of the time

accept



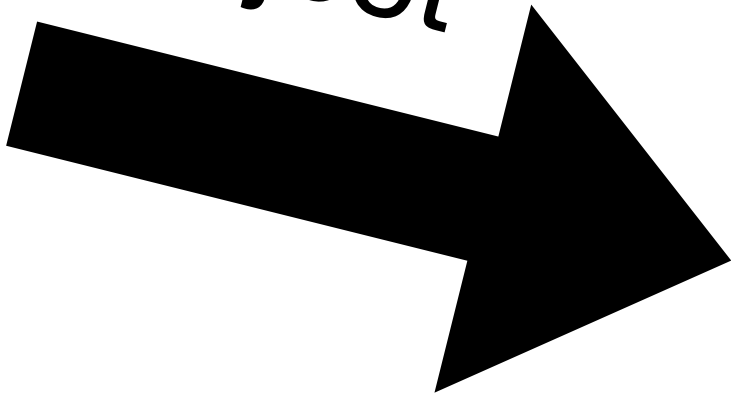
*reject*



accept

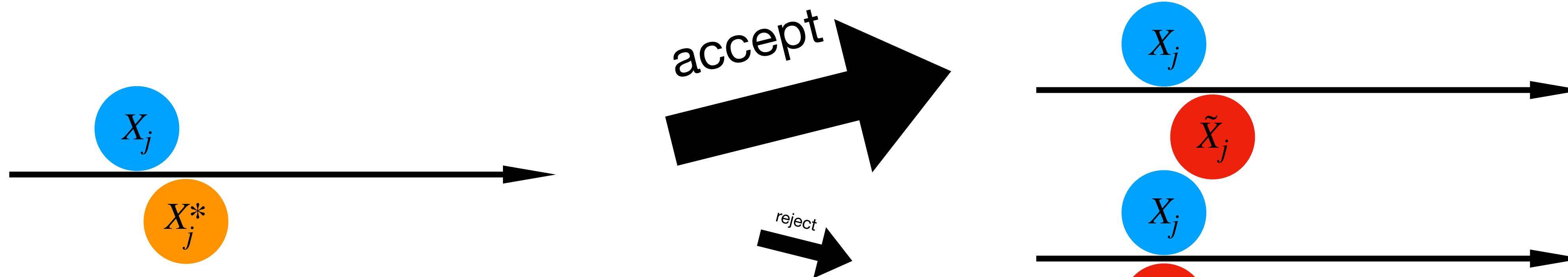


*reject*

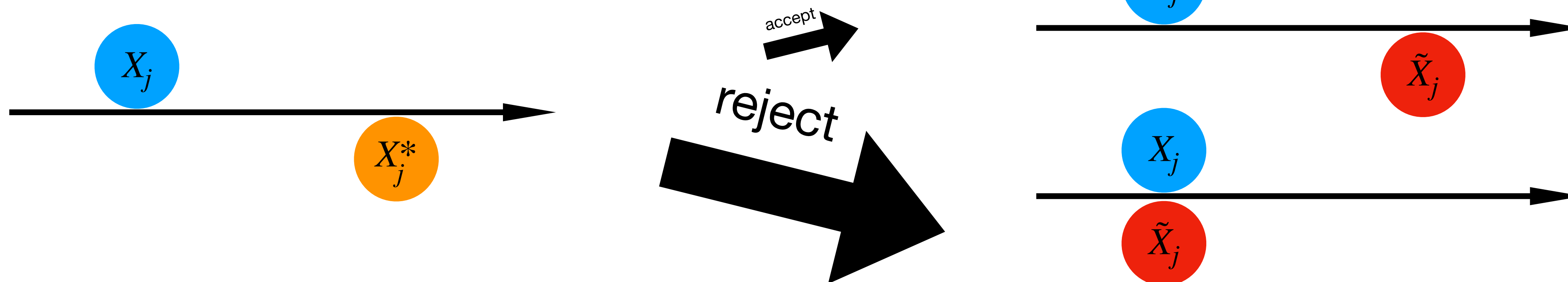




Recall: want dependence between  $\tilde{X}_j$  and  $X_j$  low for power



- if proposal too close,  $\tilde{X}_j$  must be close to  $X_j$
- if rejection rate high,  $\tilde{X}_j$  close to  $X_j$  most of the time



- same tradeoff as in MCMC
- only have **one** step

# Covariance-guided proposal