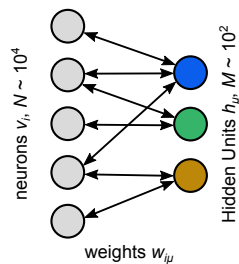


B

cRBM data generation schematic

### A compositional Restricted Boltzmann Machine (cRBM)

Neural activity  $\mathbf{v}(t=0)$ HU activity  $\mathbf{h}(t=0)$ 

Extract features from data

 $P(\mathbf{h} | \mathbf{v}(t=0))$ 

Reconstruct data from features

 $P(\mathbf{v} | \mathbf{h}(t=0))$ HU activity  $\mathbf{h}(t=1)$ 

Extract features from data

 $P(\mathbf{h} | \mathbf{v}(t=1))$ 

Reconstruct data from features

 $P(\mathbf{v} | \mathbf{h}(t=1))$ Neural activity  $\mathbf{v}(t=1)$ Neural activity  $\mathbf{v}(t=2)$ 

Sampling steps

