

# Particle filter

$$t = 1$$

Sample from proposal

$$\mathbf{x}_1^{(k)} \sim q(\cdot \mid \mathbf{y}_1^{(k)}, \theta)$$

$$\mathbf{x}_1^{(1)}$$

$$\mathbf{x}_1^{(2)}$$

$$\mathbf{x}_1^{(3)}$$

$$\mathbf{x}_1^{(4)}$$

$$\mathbf{x}_1^{(5)}$$