

N particles

$$\left\{ \left( \hat{\mathbf{x}}_{k-1}^{(i)}, N^{-1} \right) \right\}_{i=1}^N$$

Likelihood  
function  $p(\mathbf{z}_k | \mathbf{x}_k)$

Weight

$$\left\{ \left( \hat{\mathbf{x}}_{k-1}^{(i)}, \tilde{w}_{k-1}^{(i)} \right) \right\}_{i=1}^N$$

Resample

$$\left\{ \left( \mathbf{x}_{k-1}^{(i)}, N^{-1} \right) \right\}_{i=1}^N$$

Propagate  
particles

$$\left\{ \left( \hat{\mathbf{x}}_k^{(i)}, N^{-1} \right) \right\}_{i=1}^N$$

Weight

$$\left\{ \left( \hat{\mathbf{x}}_k^{(i)}, \tilde{w}_k^{(i)} \right) \right\}_{i=1}^N$$

