

Prediction  
Distribution

Filtering  
Distribution

$$\mathbf{m}_0, V_0 \longrightarrow \mathbf{m}_{1|0}, P_{1|0} \xrightarrow{\mathbf{y}_1} \mathbf{m}_{1|1}, P_{1|1}$$

$$\begin{array}{ccc} & \swarrow & \\ & \mathbf{m}_{2|1}, P_{2|1} & \xrightarrow{\mathbf{y}_2} \mathbf{m}_{2|2}, P_{2|2} \end{array}$$

$\vdots$

$\vdots$

$$\mathbf{m}_{n|n-1}, P_{n|n-1} \xrightarrow{\mathbf{y}_n} \mathbf{m}_{n|n}, P_{n|n}$$

$$\begin{array}{ccc} & \swarrow & \\ & \mathbf{m}_{n+1|n}, P_{n+1|n} & \xrightarrow{\mathbf{y}_{n+1}} \mathbf{m}_{n+1|n+1}, P_{n+1|n+1} \end{array}$$