

Observation

\vec{y}

Prior
(Obs. Database)

$\vec{y}_1 \rightarrow \vec{x}_1$

$\vec{y}_2 \rightarrow \vec{x}_2$

$\vec{y}_3 \rightarrow \vec{x}_3$

...

Posterior

$w(\vec{y}, \vec{y}_1) \cdot \vec{x}_1$

$w(\vec{y}, \vec{y}_2) \cdot \vec{x}_2$

$w(\vec{y}, \vec{y}_3) \cdot \vec{x}_3$

...

Retrieved state

\vec{x}

$$w(y, y_n) \propto (\vec{y} - \vec{y}_n)^T \mathbf{S}^{-1} (\vec{y} - \vec{y}_n)$$

$$\sum_n w(y, y_n) = 1$$