State Estimate (output)

$\hat{\mathbf{x}}_k$ $(n \times 1)$: State estimate at time k

Measurement (input)

$\mathbf{z}_k$ $(m \times 1)$: Measurement at time k

System Model

$\mathbf{A}$ $(n \times n)$: State transition matrix

$\mathbf{H}$ $(\mathrm{m} \times n)$: Measurement matrix

$\mathbf{Q}$ $(n \times n)$: State error autocovariance matrix

$\mathbf{R}$ $(m \times m)$: Measurement error autocovariance matrix

Internal Computation Quantities

$\mathbf{K}_k$ $(n \times m)$: Kalman gain

$\mathbf{P}_k$ $(n \times n)$: Estimate of error covariance matrix

$\hat{\mathbf{x}}_k^-$ $(n \times 1)$: Prediction of the state estimate

$\mathbf{P}_k^-$ $(n \times n)$: Prediction of error covariance matrix