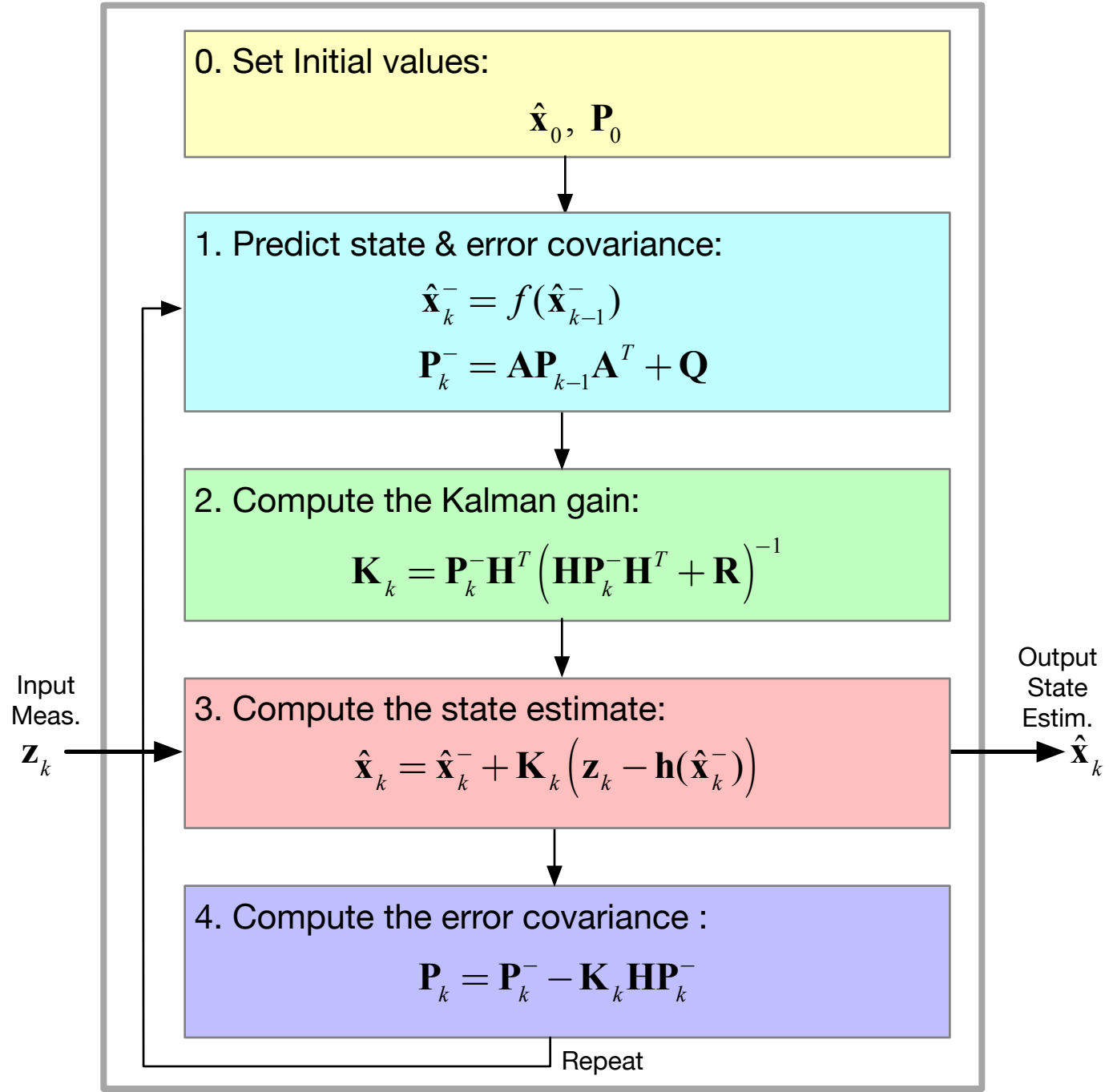
0. Set Initial values:
$\hat{\mathbf{x}}_0,\ \mathbf{P}_0$
1. Predict state & error covariance:
$\hat{\mathbf{x}}_k^- = f(\hat{\mathbf{x}}_{k-1}^-)$
$\mathbf{P}_k^- = \mathbf{A}\mathbf{P}_{k-1}\mathbf{A}^T + \mathbf{Q}$
2. Compute the Kalman gain:
$\mathbf{K}_k = \mathbf{P}_k^-\mathbf{H}^T\left(\mathbf{H}\mathbf{P}_k^-\mathbf{H}^T + \mathbf{R}\right)^{-1}$
Input Meas.
$\mathbf{z}_k$
3. Compute the state estimate:
$\hat{\mathbf{x}}_k = \hat{\mathbf{x}}_k^- + \mathbf{K}_k\left(\mathbf{z}_k - \mathbf{h}(\hat{\mathbf{x}}_k^-)\right)$
Output State Estim.
$\hat{\mathbf{x}}_k$
4. Compute the error covariance :
$\mathbf{P}_k = \mathbf{P}_k^- - \mathbf{K}_k\mathbf{H}\mathbf{P}_k^-$
Repeat