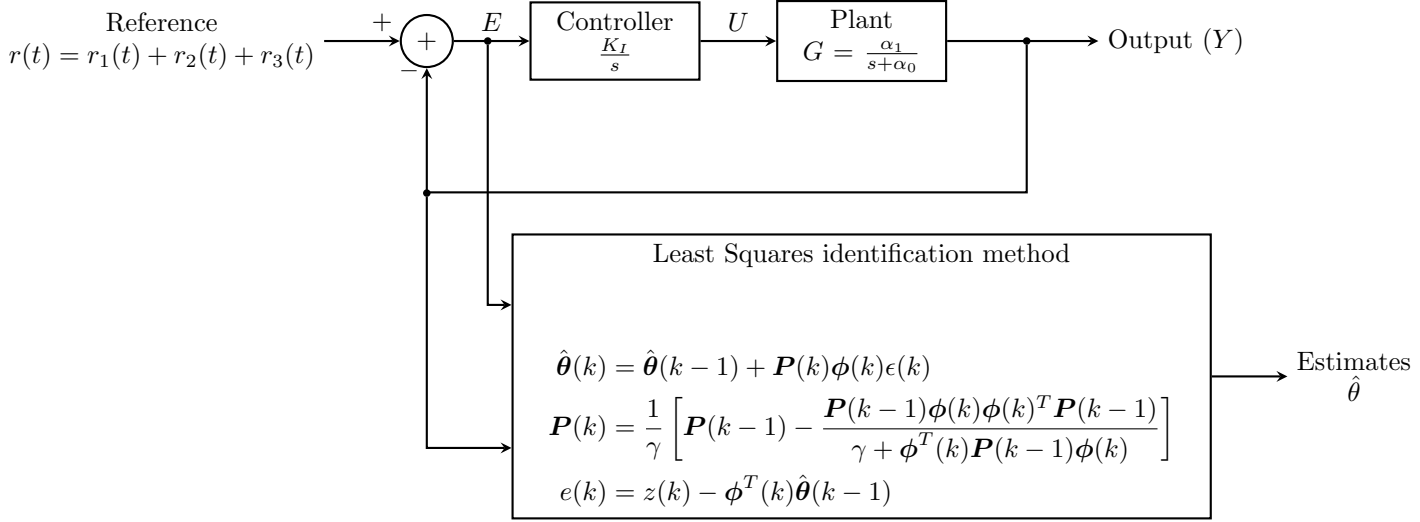

$\mathbf{P}(0) = \mathbf{P}_0 = \mathbf{P}_0^\intercal > 0$, $\mathbf{P}_0 = \rho \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, $z = y(k) - y(k-1)$, $\boldsymbol{\phi} = \begin{bmatrix} e(k-1) + e(k-2) \\ y(k-1) - y(k-2) \end{bmatrix}$, $\boldsymbol{\theta} = \begin{bmatrix} \theta_1 \\ \theta_2 \end{bmatrix}$,
$\hat{\alpha_0} = -\frac{\ln \hat{\theta_2}}{T_S}$, $\hat{\alpha_1} = \frac{2\hat{\theta_1}\hat{\alpha_0}}{T_S(1-\hat{\theta_2})K_I}$, and T_S is sampling time.