



$$A = \begin{bmatrix} 0.9944 & -0.1203 & -0.4302 \\ 0.0017 & 0.9902 & -0.0747 \\ 0 & 0.8187 & 0 \end{bmatrix}$$

$$B = \begin{bmatrix} 0.4252 & -0.0082 & 0.1813 \end{bmatrix}^T$$

$$C = [1 \ 0 \ 0] \quad D = 0$$

$$x_0 = \begin{bmatrix} 0.05 & 0.15 & 0.2 \end{bmatrix}$$

Osservatore Dinamico
dell'uscita

$\hat{x}_0 = \text{circled } x_0$ $D_0 = \begin{bmatrix} 0 & 0 \end{bmatrix}$

$$\begin{cases} \hat{x}(t+1) = A \hat{x}(t) + B u(t) + \\ \quad + K [y(t) - C \hat{x}(t)] \\ \hat{y}(t) = C \hat{x}(t) \end{cases}$$

A_0 B_0

$$\begin{cases} \hat{x}(t+1) = (A - KC) \hat{x}(t) + \begin{bmatrix} B & K \end{bmatrix} \begin{bmatrix} u(t) \\ y(t) \end{bmatrix} \\ \hat{y}(t) = C \hat{x}(t) + D_0 \begin{bmatrix} u(t) \\ y(t) \end{bmatrix} \end{cases}$$

C_0 $D_0 = 0$

$n_z = 1$
 $n_c = 2$

$$z(t) \equiv e(t) = y(t) - \hat{y}(t)$$

Errore di stima
(in assenza di guasto)

$$\lim_{t \rightarrow \infty} e(t) = 0$$

$$\boxed{|v| \leq 1}$$

$$|v| =$$

$$\left\{ \begin{array}{l} \rightarrow 0 \\ \rightarrow 1 \end{array} \right.$$

Osservatore
veloce

Osservatore
lento