

DEDUÇÃO DA ÚLTIMA EQUAÇÃO DA PG. 70 DA APOSTILA

$$KG: \begin{cases} \dot{\hat{x}}(t) = A_{\infty} \hat{x}(t) + B_{\infty} y_2(t) \\ u_2(t) = F_{\infty} \hat{x}(t) \end{cases}$$

$$A_{\infty} = A + \frac{1}{\gamma^2} B_1 B_1^T X_{\infty} + B_2 F_{\infty} + Z_{\infty} L_{\infty} C_2$$

$$B_{\infty} = -Z_{\infty} L_{\infty}$$

$$F_{\infty} = -B_2^T X_{\infty}$$

$$\begin{aligned} \dot{\hat{x}}(t) &= \left(A + \frac{1}{\gamma^2} B_1 B_1^T X_{\infty} + B_2 F_{\infty} + Z_{\infty} L_{\infty} C_2 \right) \hat{x}(t) + \\ &+ (-Z_{\infty} L_{\infty}) y_2(t) = \end{aligned}$$

$$= A \hat{x}(t) + \underbrace{\frac{1}{\gamma^2} B_1 B_1^T X_{\infty} \hat{x}(t)}_{v(t)} + B_2 \underbrace{F_{\infty} \hat{x}(t)}_{u_2(t)} +$$

$$+ Z_{\infty} L_{\infty} (C_2 \hat{x}(t) - y_2(t))$$

$$\therefore \boxed{\dot{\hat{x}}(t) = A \hat{x}(t) + B_1 v(t) + B_2 u_2(t) + Z_{\infty} L_{\infty} (C_2 \hat{x}(t) - y_2(t))}$$