CONTROL 2 - IIC2685

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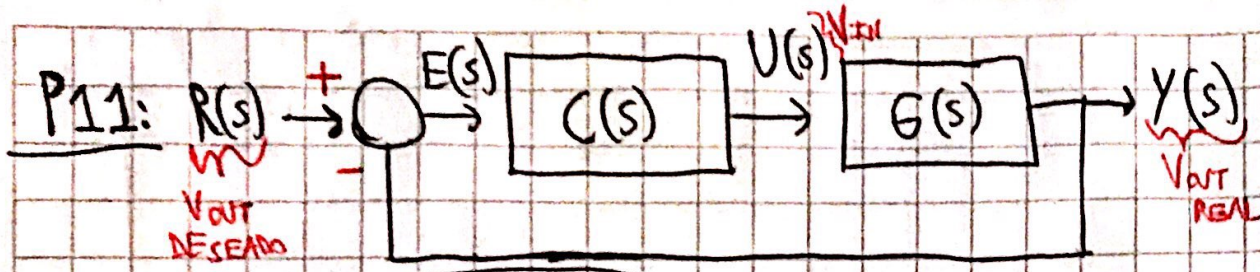
P11:



→ TENEMOS: $G(s) = \dfrac{1}{s^2+3s+2}$ (1) PLANTA

* $e(t) := V_{OUT}^{REF}(t) - V_{OUT}(t)$

→ CONTROLADOR PI: $u(t) = \underbrace{K_P \cdot e(t)}_{P} + \underbrace{K_I \int e(t)\,dt}_{I}$

↓ LAPLACE

$$U(s) = K_P \cdot E(s) + K_I \cdot \frac{E(s)}{s}$$

↓

CONTROLADOR
IN: E(s)
OUT: U(s)

$$\Rightarrow C(s) = \frac{U(s)}{E(s)} = K_P + \frac{K_I}{s} \quad (2)$$

TRANSFER LAZO CERRADO

$$\Rightarrow H(s) = \frac{Y(s)}{R(s)} = \frac{G(s)\cdot C(s)}{1 + G(s)\cdot C(s)} \quad (3)$$

$$\Rightarrow (1), (2) \text{ y } (3): \quad H(s) = \frac{\dfrac{K_P \cdot s + K_I}{(s^2+3s+2)\cdot s}}{\dfrac{(s^3+3s^2+2s)\cdot 1 + K_P \cdot s + K_I}{s(s^2+3s+2)}} = \frac{K_P \cdot s + K_I}{K_P \cdot s + K_I + s^3 + 3s^2 + 2s}$$