Control Automático
EM-720

Tarea #7

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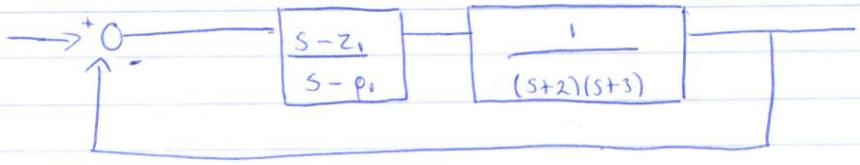
(6pm - 9pm)

Segundo Cuatrimestre 2018

Tarea # 7



① Error al ~~compensador~~ escalon sin compensador

② Propongo un compensador para que el error se corrija un 10%.

$$E(s) = \frac{1}{1 + G(s)}$$

$$e_{ss} = \lim_{s \to 0} \cancel{s} \cdot \frac{1}{1 + G(s)} \cdot \frac{1}{\cancel{s}}$$

$$\lim_{s \to 0} \frac{1}{1 + G(s)}$$

$$\lim_{s \to 0} \frac{1}{1 + \frac{1}{(s+2)(s+3)}}$$

$$e_{ss} = 0,86$$

$$K_p = \lim_{s \to 0} \frac{1}{(s+2)(s+3)}$$

$$K_p = 1/6$$

$$e_{final} = 0,16$$

Luego;

$$E(s) = 0,9 \cdot e_{ss}$$
$$= 0,9 \cdot 0,86$$
$$= 0,774$$

$$K_\varphi = \frac{1}{0,774} - 1$$
$$= 0,29$$

$$0,29 = \frac{z}{p} \cdot 0,16$$

$$\frac{z}{p} = \frac{0,29}{0,16} \quad ; \quad \varphi = -1$$
$$z = -1,81$$
$$\frac{z}{\varphi} = 1,81$$