ENGENHARIA DE CONTROLE E AUTOMAÇÃO
CONTROLE II - 2020.1

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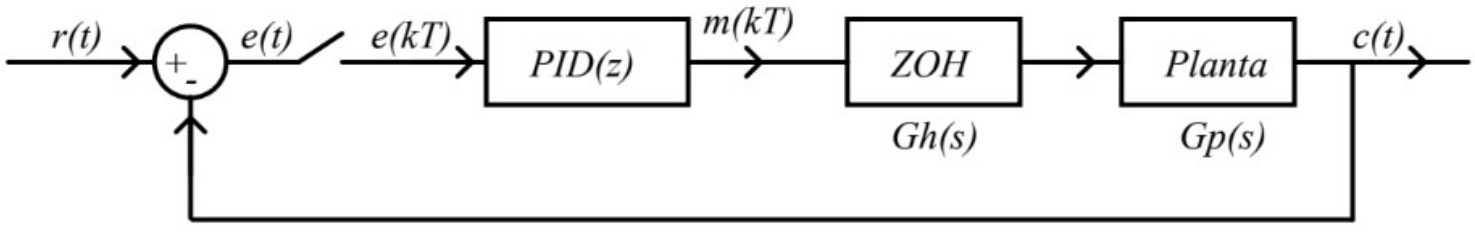
Capítulo 06 - Simulação de Sistemas Lineares



$$R_{in}(s) := \frac{1}{s+1} \qquad G_p(s) := \frac{1}{s\cdot(s+1)} \qquad G_h(s) := \frac{\left(1 - e^{s\cdot T}\right)}{s}$$

$$PID(z) := \left[K_p + \left[\frac{K_i}{\left(1 - z^{-1}\right)}\right] + K_d\cdot\left(1 - z^{-1}\right)\right] \qquad E(s) := R_{in}(s) - C_{out}(s)$$

$$R_{in}(z) := \frac{z}{\left(z - e^{-T}\right)}$$

$$F_o(z) := \frac{\left(0.5151z^3 - 0.1452\cdot z^2 - 0.2963\cdot z + 0.0528\right)}{\left(z^4 - 1.8528\cdot z^3 + 1.5906\cdot z^2 + 0.6642z + 0.0528\right)} \qquad C_{out}(z) := F_o(z)\cdot R_{in}(z) \qquad C_{out}(z) \rightarrow \frac{.5151\cdot z^3 - .1452\cdot z^2 - .2963\cdot z + .528e\text{-}1}{z^4 - 1.8528\cdot z^3 + 1.5906\cdot z^2 + .6642\cdot z + .528e\text{-}}$$

$$E(z) := R_{in}(z) - C_{out}(z) \qquad E(z) \rightarrow \frac{z}{z - e^{-T}} - \frac{.5151\cdot z^3 - .1452\cdot z^2 - .2963\cdot z + .528e\text{-}1}{z^4 - 1.8528\cdot z^3 + 1.5906\cdot z^2 + .6642\cdot z + .528e\text{-}1}\cdot\frac{z}{z - e^{-T}}$$

$$-\cdot\frac{z}{1\ z-e^{-T}}$$