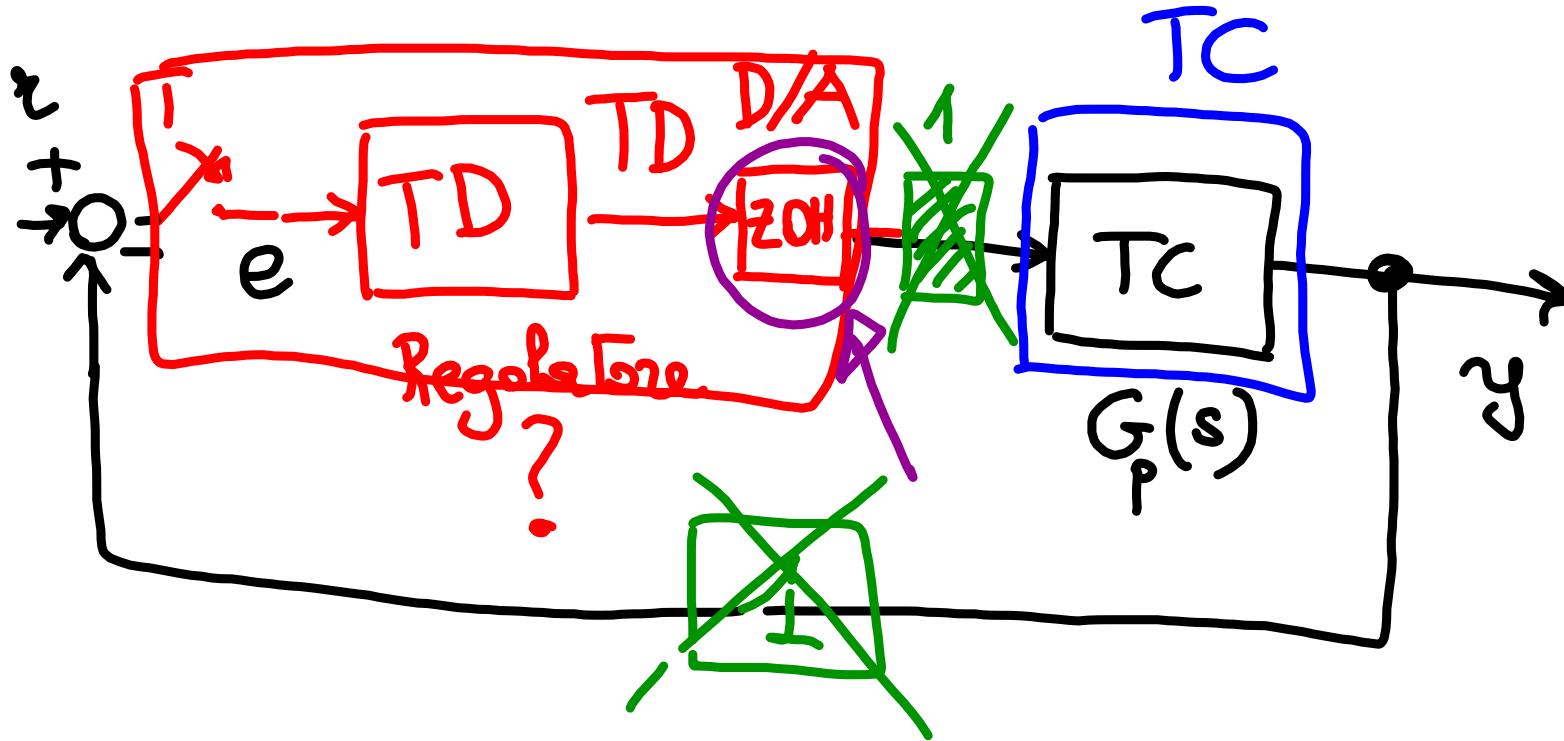
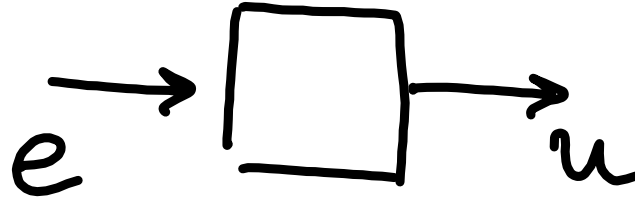


$$\begin{aligned}
 Y(s) &= Y_1(s) - Y_2(s) \\
 &= \frac{1}{s} - \frac{1}{s} e^{-sT} \\
 &= \frac{1 - e^{-sT}}{s} \equiv G_2(s)
 \end{aligned}$$

$$\begin{aligned}
 \mathcal{L}[x(t)] &= X(s) \\
 \mathcal{L}[x(t-\tau)] &= X(s)e^{-s\tau}
 \end{aligned}$$



$$u_k = f(e_0, e_1, \dots, e_k, \underset{\cdot \uparrow}{u_0}, u_1, \dots, \underbrace{u_{(k-1)}})$$



$u(k) =$ funzione di segnali
ritardati

ARX

Lineare

AR auto-regressiva

ordine
memoria

$$u(k) = -a_1 u(k-1) - a_2 u(k-2) - \dots - a_n u(k-n) + b_0 e(k) + b_1 e(k-1) + \dots + b_m e(k-m)$$

$a_i, b_i \in \mathbb{R}$ e Xogenous
LTI

\rightarrow Fibonacci $\lim_{k \rightarrow \infty} u(k) = +\infty$

$$u(k) = -a_1 u(k-1) - a_2 u(k-2) + b_0 e(k)$$

$$u(k) = u(k-1) + u(k-2)$$

$$u(1) = u(2) = 1$$

AR
 $\frac{u(k-1)}{u(k)}$