

$$p_{1,2} = -\delta \pm j\omega_0$$

$$\delta > 0$$

stable



Im

$$\delta < 0$$

instable

$$j\omega_0$$

$$\psi = \arcsin(\zeta)$$

$$\omega_n$$

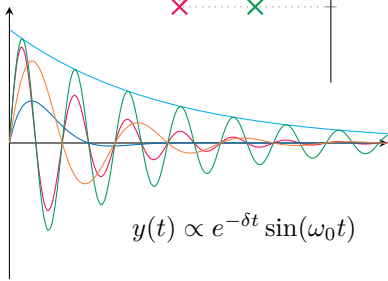
$$\downarrow T_{reg}$$

$$\uparrow T_{reg}$$

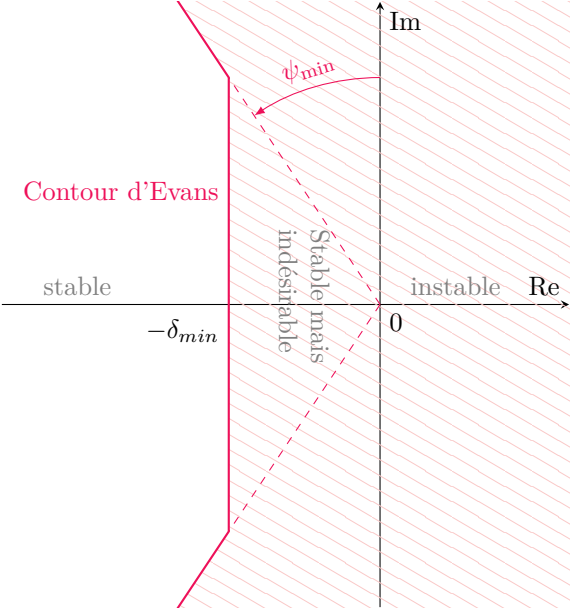
$$-\delta = -\frac{3}{T_{reg}}$$

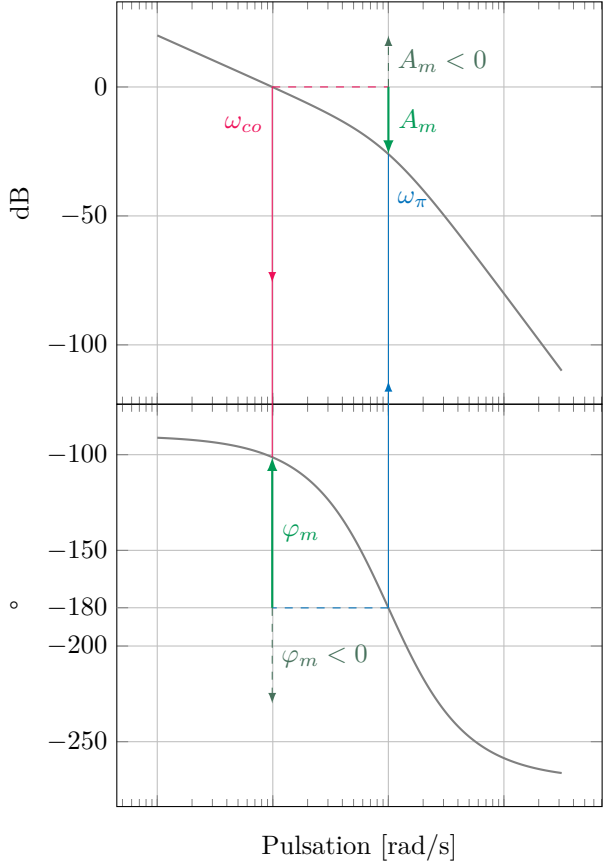
Re

$$-j\omega_0$$



$$y(t) \propto e^{-\delta t} \sin(\omega_0 t)$$





$$H(z) = \frac{z(z+1)}{(z-1)(z-0.25)(z-0.5)}$$



$$\frac{H(z)}{z} = \frac{(z+1)}{(z-1)(z-0.25)(z-0.5)}$$



$$\frac{H(z)}{z} = \frac{R_1}{(z-1)} + \frac{R_2}{(z-0.25)} + \frac{R_3}{(z-0.5)}$$

$$R_1 = \frac{(1+1)}{(1-0.25)(1-0.5)}$$

$$R_2 = \frac{(0.25+1)}{(0.25-1)(0.25-0.5)}$$

$$R_3 = \frac{(0.5+1)}{(0.5-1)(0.5-0.25)}$$