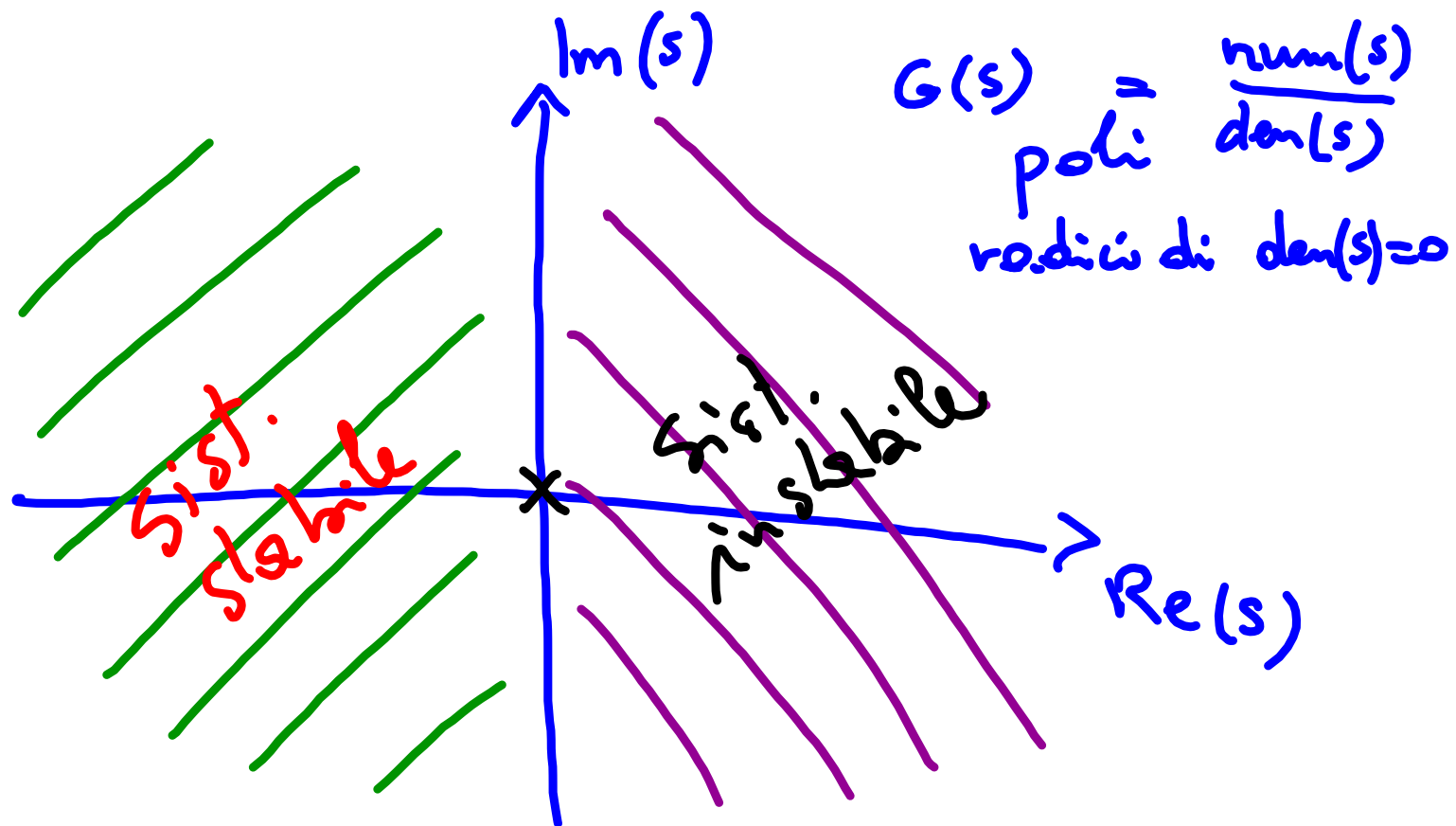


$$G_r(s) = \frac{G(s)}{1+G(s)} = \frac{\text{num}(s)}{\text{den}(s)}$$

radici di  $\text{den}(s)$   $\text{Re} > 0$   
 sist. instabile



# Luoghi delle radici

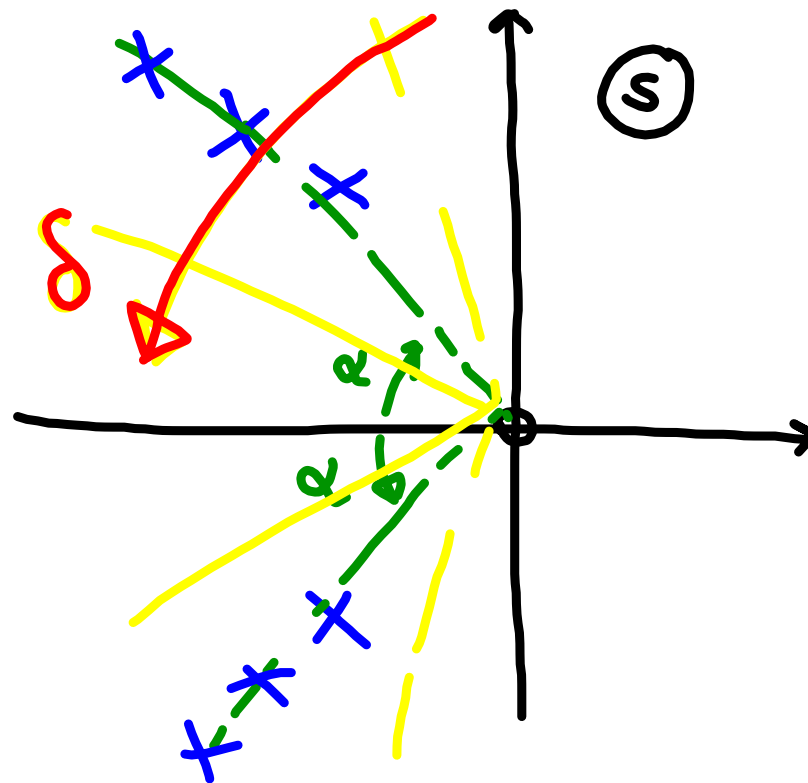
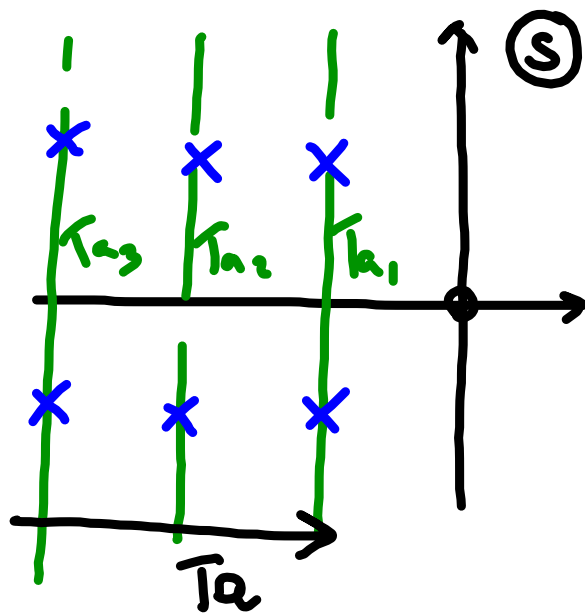
$$T_a = \frac{3}{\delta \omega_n} \quad (5\%)$$

$$\underline{T_a = \text{cost.}}$$

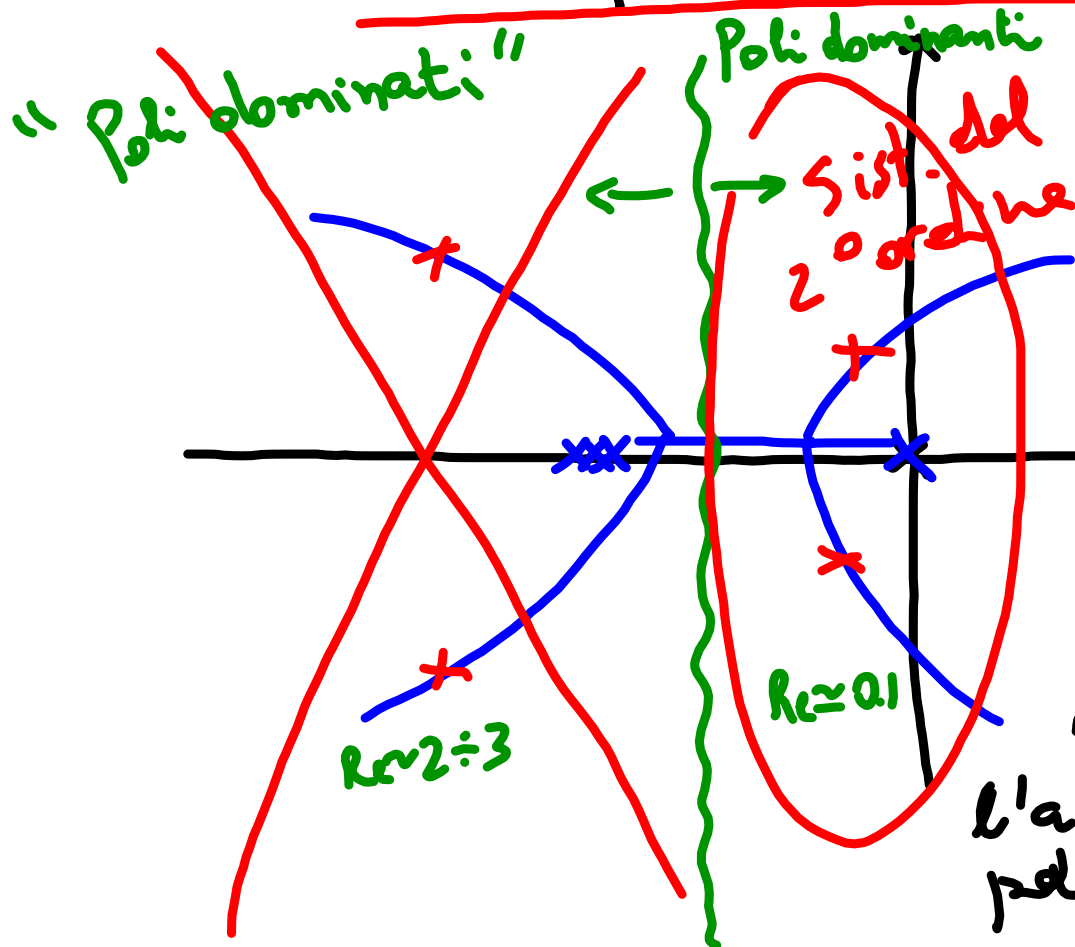
x Sist. 2° ordine

$$s\% = 100 e^{-\frac{\delta \pi}{\sqrt{1-\delta^2}}}$$

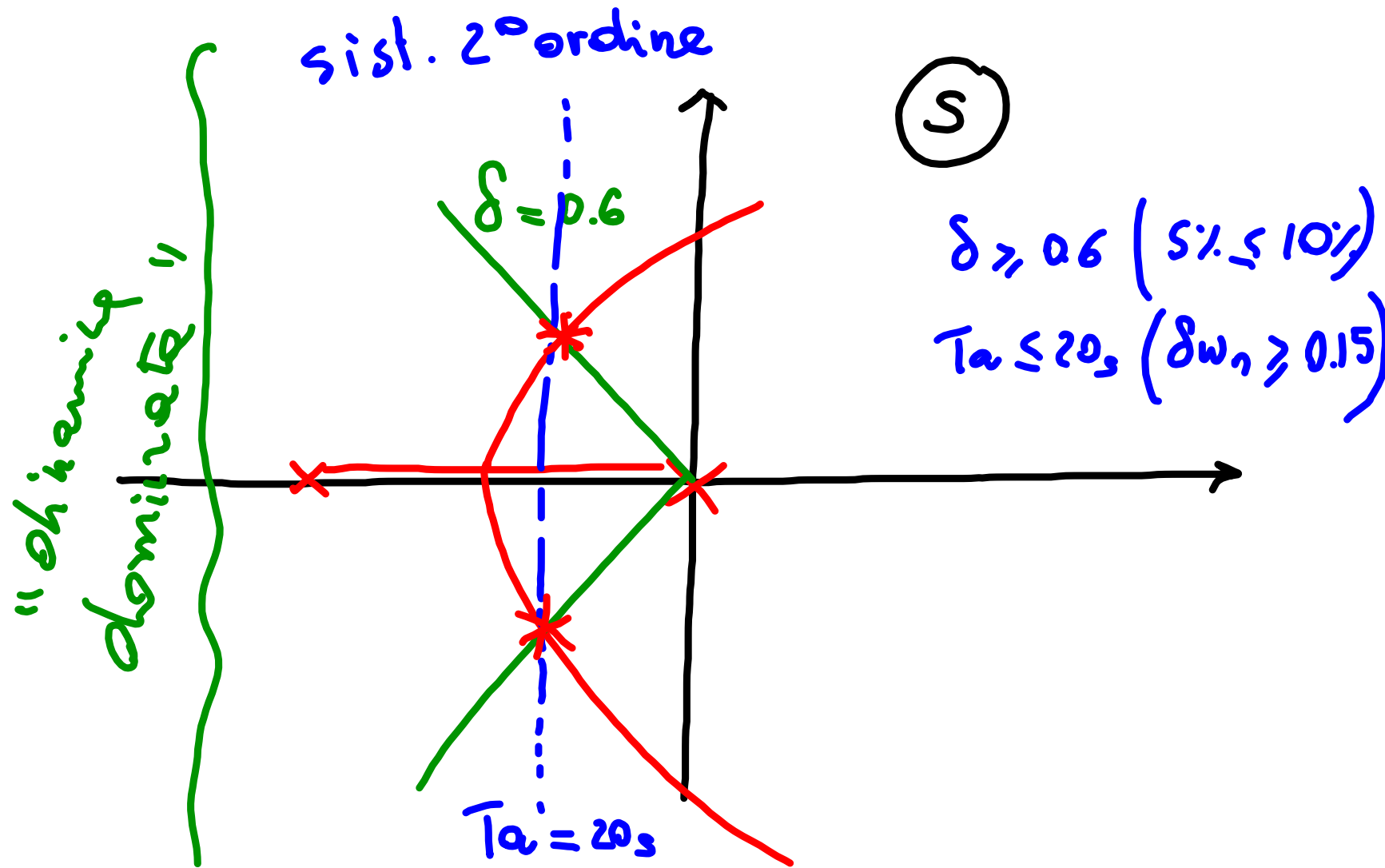
$$\delta = \cos \alpha$$



# Principio dei poli dominanti



$\exists K:$   
 i poli a destra  
 hanno parte  
 reale 1 ordine  
 di grandezza +  
 piccolo di quelli  
 a sinistra  $\Rightarrow$  vale  
 l'approssimazione dei  
 poli dominanti



$$S\% \leq 10\% \mid T_a \leq 20s$$

$K$	0.1953	0.1756	0.22
$T_a$	19.97s	20.97	23.61
$S\%$	9%	5.9%	13.90%

$K \downarrow \Rightarrow S\% \downarrow$   
 $K \downarrow \Rightarrow T_a \uparrow$

