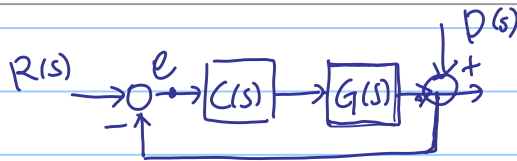


Effect of addition of poles

Note Title

11/19/2008



$$T_{d \rightarrow e}(s) = \frac{-1}{1 - (-CG)}$$

Improves "Steady state error" +

By adding $\frac{1}{s}$ & C.L. stable (Type 1)

$$= \frac{-1}{1 + \underbrace{CG}_{\text{type 1}}}$$

\Rightarrow perfect tracking for $\begin{cases} R(s) = \frac{1}{s} \\ D(s) = \frac{1}{s} \end{cases}$
 $e_{ss} = 0$

By adding $\frac{1}{s^2}$ & C.L. stable (Type 2)

\Rightarrow perfect tracking for $\begin{cases} R(s) = \frac{1}{s^2} & \& \begin{cases} R = \frac{1}{s} \\ D = \frac{1}{s} \end{cases} \\ D(s) = \frac{1}{s^2} \end{cases}$

eg.) PI controller $C(s) = K_p + \frac{K_I}{s} = \frac{sK_p + K_I}{s}$