A summary of how to understand disturbances.

The world according to the control design engineer: that's the true plant.

Goal of the design engineer: Find $K$ so that this thing works well.

The world according to the disturbance:
The world according to the disturbance (again, but slightly manipulated)

\[
\begin{align*}
& 0^+ \xrightarrow{e_1} L(s) \xrightarrow{\frac{-KG}{1+KG}} \frac{KG}{1+KG} \xrightarrow{e_1} \Phi_1 \\
& 0^+ \xrightarrow{e_1} L(s) \xrightarrow{\frac{KG}{1+KG}} \frac{KG}{1+KG} \xrightarrow{e_1}
\end{align*}
\]

Goal of the uncertainty: mess this plant up as much as possible, within bounds:

\[|L(j\omega)| < \tau(j\omega)\]

The open-loop system for the disturbance is the closed-loop system of the engineer.

We know how much we do not know.
\[ G(s) = \frac{1}{10(s+1)(s_{10}+1)^2} \]
\[
\kappa G(s) = \frac{100}{10(s+1)(s/10+1)^2}.
\]
\[\kappa = 100\]
$K = 100 \quad \frac{KG}{1+KG}$
\( \nu = 150 \)

\[ \nu G. \]
\[ u = 150 \times \frac{uG}{1 + uG} \]
\( n = 180 \)

\( \nu_{6} \).
\[ \mathcal{H} = 180 \]
\[ \frac{UG}{1+UG} \]