



to learn how to use **robust control** to design controller for **practical system**

H_∞ norm
 $\|G\|_\infty := \begin{cases} \sup_w |G(jw)| & \text{--- SISO} \\ \sup_w \bar{\sigma}(G(jw)) & \text{--- MIMO} \end{cases}$

$\bar{\sigma} = \text{maximum singular value}$
 $\sigma_i(A) = \sqrt{\lambda_i(A^*A)}$
 $\bar{\sigma}(A) = \max_i \sigma_i(A)$ **eigenvalue**

Advanced Automation

classical control theory (1940~)

modern control theory (1960~)

to consider plant uncertainty

gap (physical modelling)

differential equation

subjective way
graphical tool for human

objective way
more mathematical tool

