Kontrol Sistemleri

Control Systems – Lecture 1

Original notes: Control-Systems-lecture-1.pdf

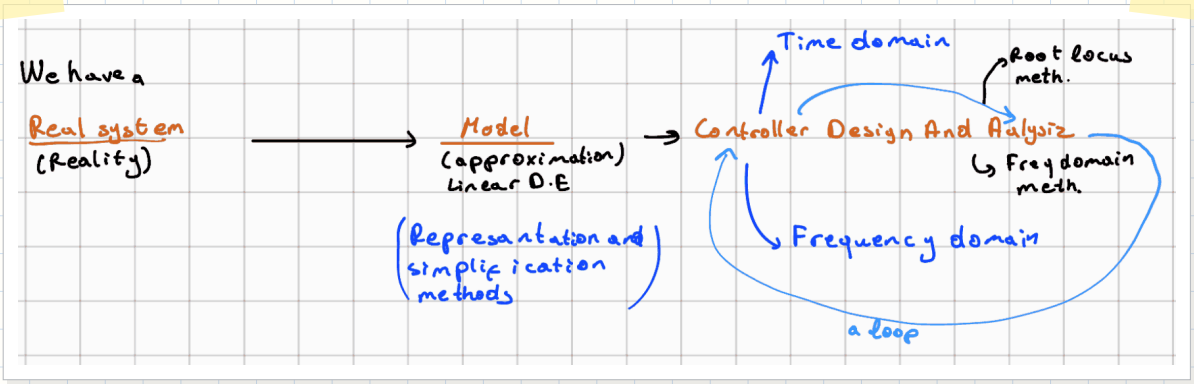
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orig. p. 1

Control Systems

(Automatic Control, lineer Control, Engineering Control)

Basic assumption → LTI systems



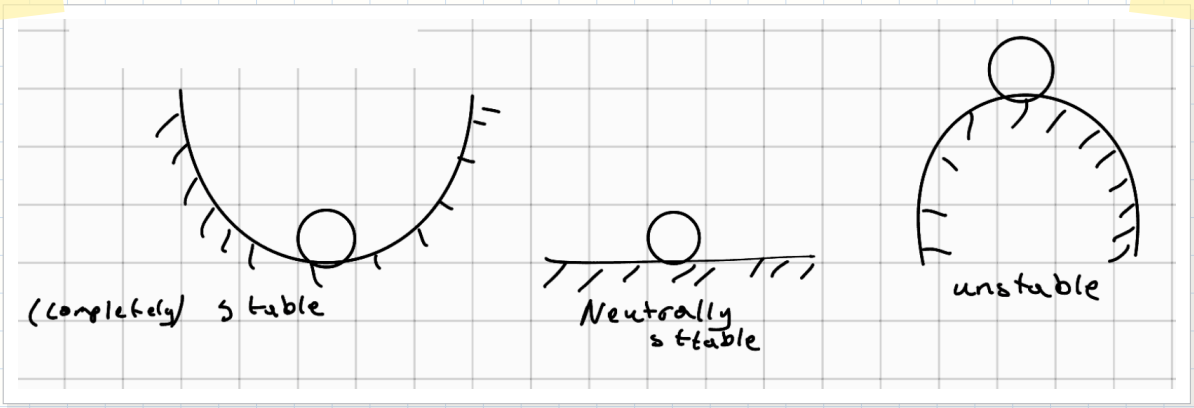
original drawing, p. 1

Output should be

1- Acurate (error) ← Partical solution
2- Quality (of the output) (%OS, t_s, t_p) ← Homogen solution
* 3- Stability

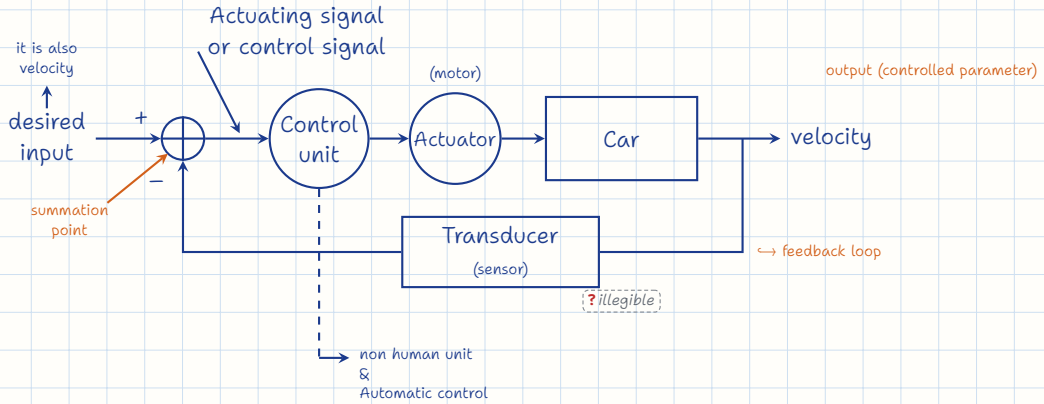
To control a system: it should be dynamic, stable,

Stability types:



original drawing, p. 1

orig. p. 2



Classification for control systems

* Architecture → open loop
  ↪ closed loop : feed back

* Energy Source in the System → Active (always need energy source)
  ↪ passive (you dont need energy source)

* Input-output → SISO (Single input single-output)
  ↪ SIMO (" " multiple ")
  ↪ MISO
  ↪ MIMO

Root locus, Bode-plot
(classical control) (Freq)
Modern control (time domain)
↓ State-space

SISO example : Regulators, Amplifiers, thermositor, dc motors, water controller in a pool,

MIMO Example: Autonom vehicle, Electrical distrubition system, aircraft systems, Internet Router, Camera, Temperature System of (?BMS)

SIMO Example: Radar systems, Powerbank

MISO Example: A computer temp sytem with multiple sensors and one fan