



Course of
"Industrial Control System Security"
2024/25

Project

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Team code: **09tkpu5**

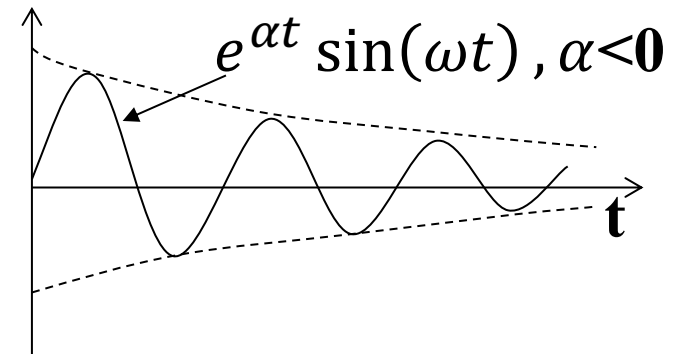
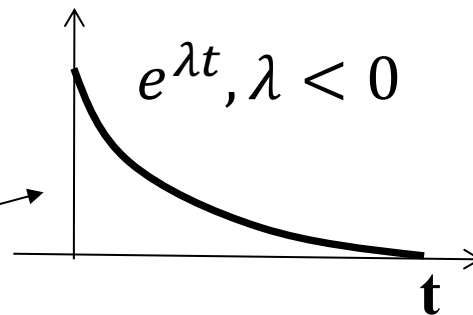


Analysis of LTI system in the time and frequency domains

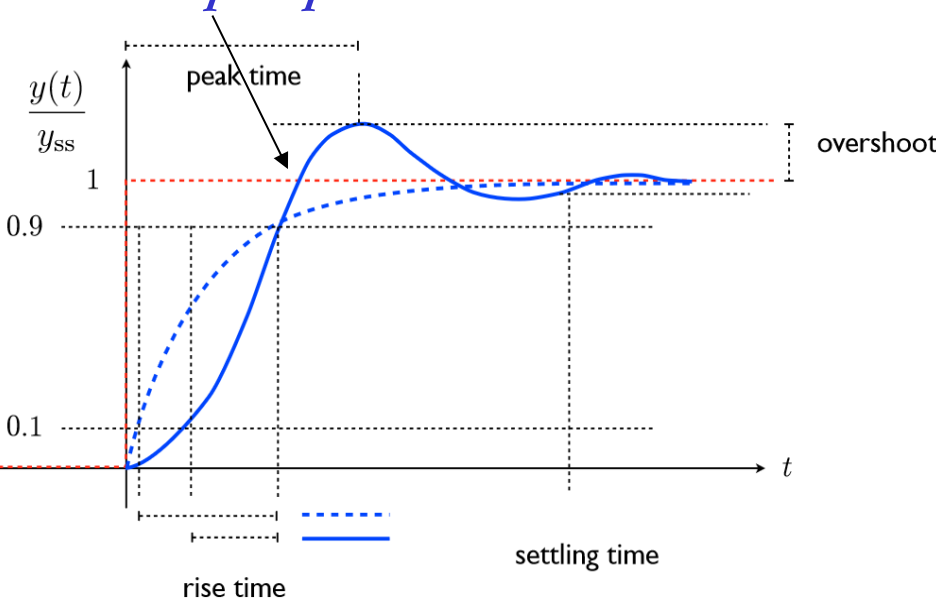
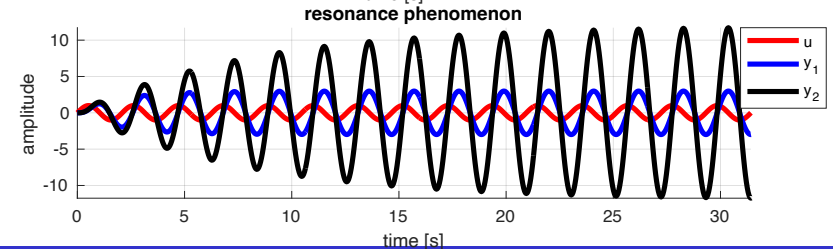
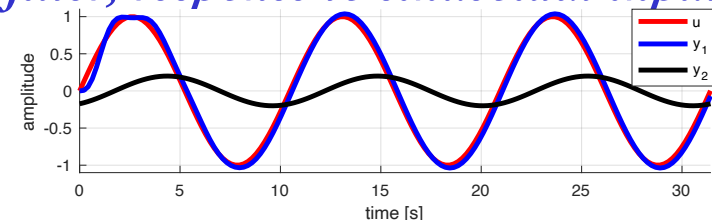


Given the input-output representation or the state space representation, evaluate

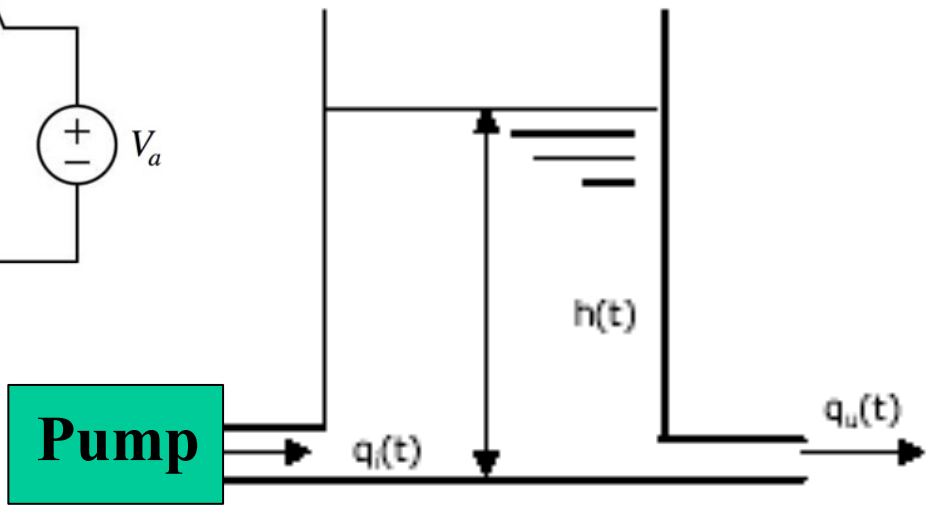
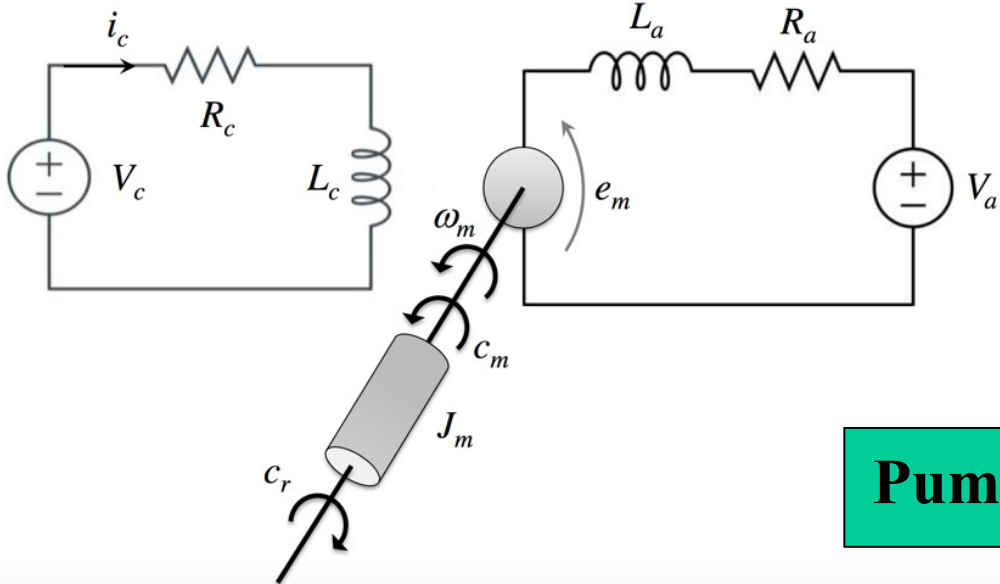
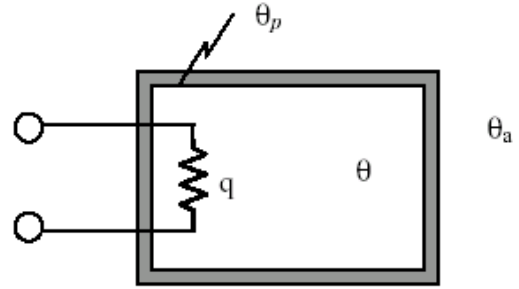
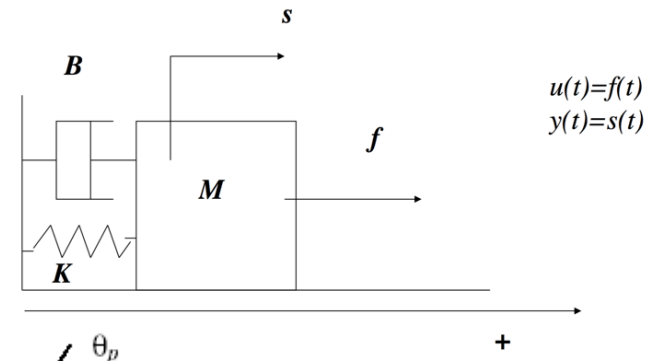
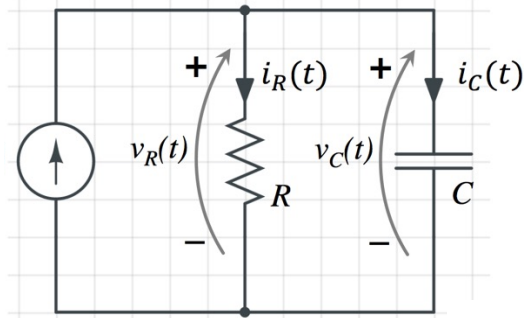
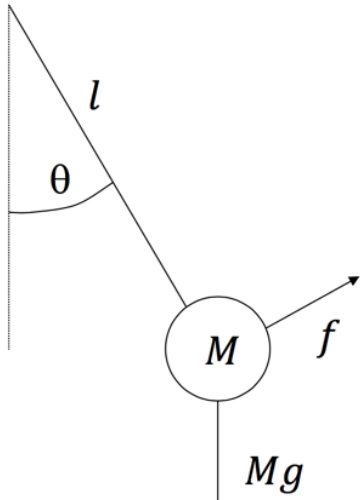
- ★ Transfer function
- ★ Stability analysis
- ★ Free evolution
- ★ Step response

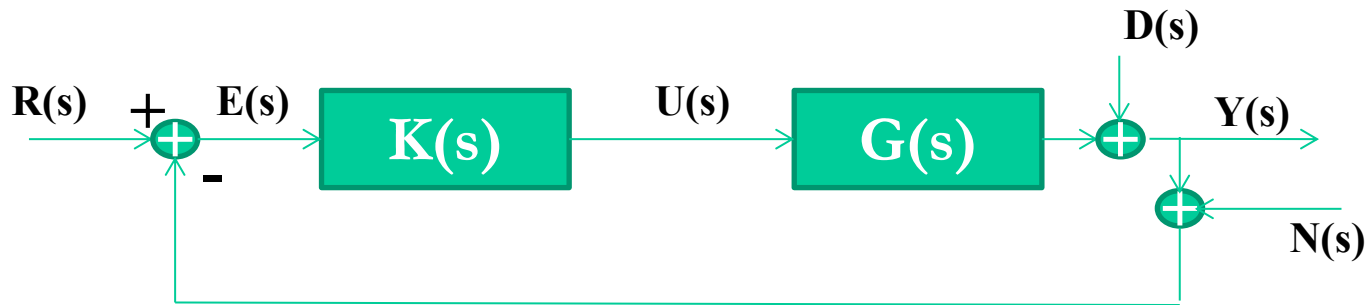


★ Frequency response (system as a filter, response to sinusoidal inputs)



Examples of dynamical systems





❖ Evaluate the performances (static and transient performances) of the closed-loop control system by employing different types of controllers $K(s)$:

★ Proportional controller

★ Integral controller

★ or an ON-OFF controller

(only for a plant $G(s)$ of first order)

