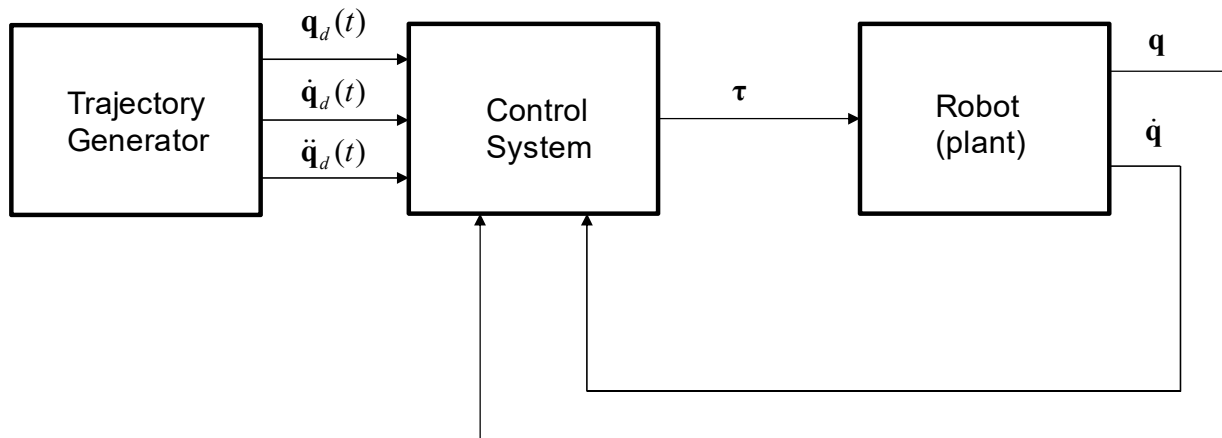


CHAPTER 9. LINEAR CONTROL OF MANIPULATORS

- Mathematical model of the manipulator by linear differential equations

Feedback Closed Loop Control

- Model imperfection
- Disturbances



- Servo error: $E = \mathbf{q}_d - \mathbf{q}$; $\dot{E} = \dot{\mathbf{q}}_d - \dot{\mathbf{q}}$
- Stable system: errors remain small under moderate disturbances
- Unstable system: errors increase