MEEG 311 – Lecture 16
Vibration and Control

Ioannis Poulakakis

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Goals:

- Using feedback to stabilize an unstable plant and meet desired transient performance specifications

- Example: Position control of a field-controlled DC motor
  - Overshoot specification: Damping ratio
  - Rise time specification: Natural frequency
  - Settling time specification: Product of (damping ratio)*(natural frequency)
  - Admissible regions in the complex plane

- Model reduction via time-scale separation: Design controller using only the dominant poles