Assignment 3

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Part 1: Point-to-Point PD Control

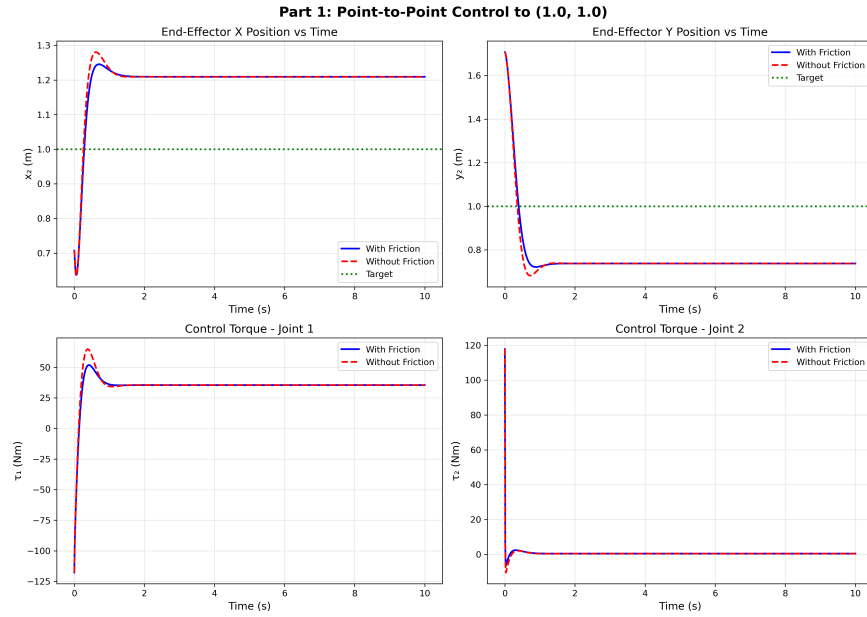

Figure 1: Part 1 Results (x2 vs t, y2 vs t, and torque plots)

Observations

- Both friction and no-friction cases reach close to the target but with noticeable steady-state error.

- Torque values peak due to large initial deviation.

- Friction slightly alters the transient response but final behaviour remains similar.
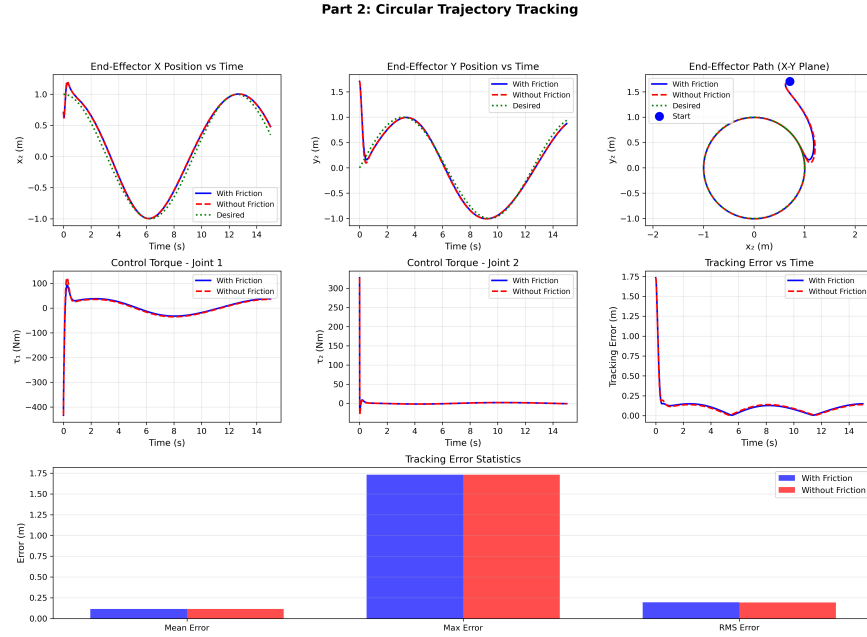
Part 2: Circular Trajectory PD Control

Figure 2: Part 2 Results (trajectory tracking and torque plots)

Observations

- Average tracking error is small but maximum error is high due to rapid curve changes.

- Required torques are significantly larger than in Part 1.

- Friction has minor influence on overall tracking performance.