Optimal Control
LQR and Riccati Equation

Control Theory Research Group

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Abstract

Linear quadratic optimal control design.

1   Introduction

This report presents computational analysis of optimal control.

2 Mathematical Framework

optimal_control_plot1.pdf
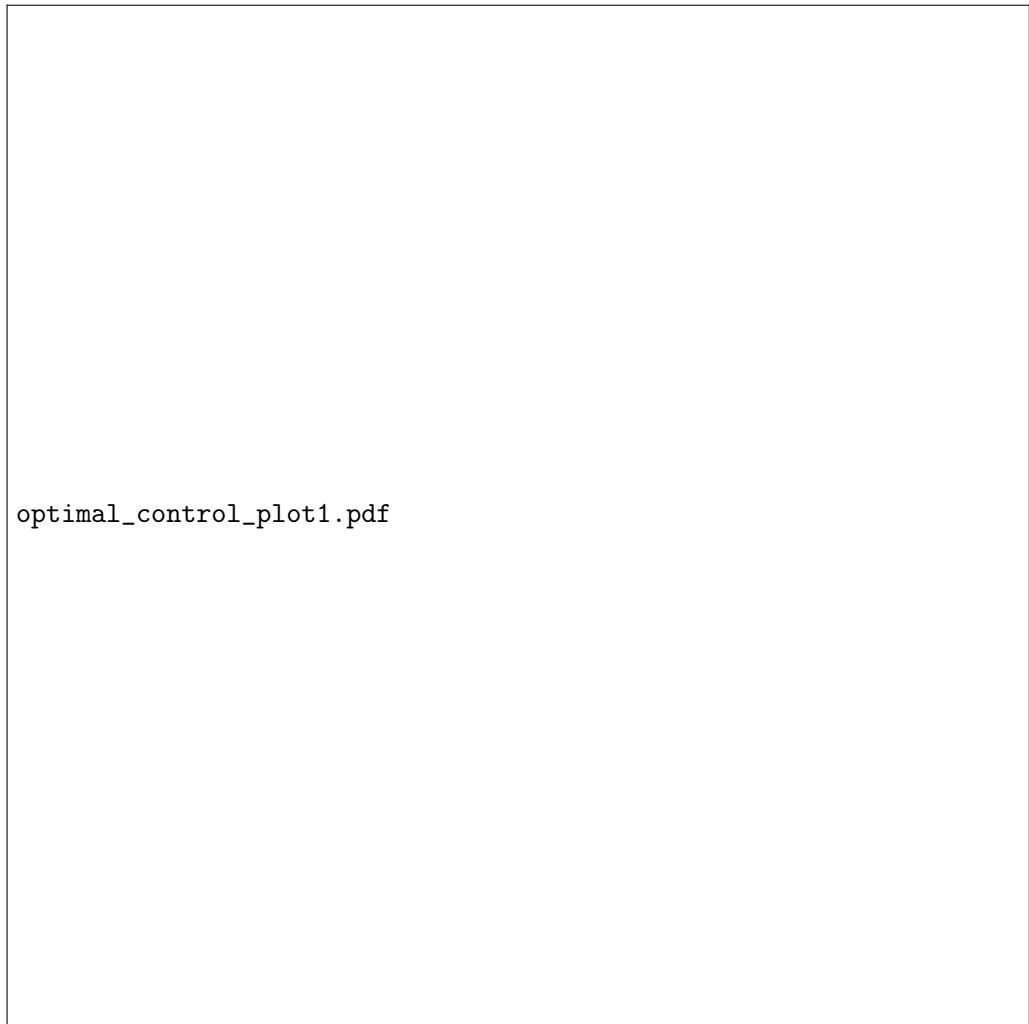
Figure 1: Primary analysis results.

3 Secondary Analysis

optimal_control_plot2.pdf

Figure 2: Secondary analysis comparison.

4 Parameter Study

optimal_control_plot3.pdf
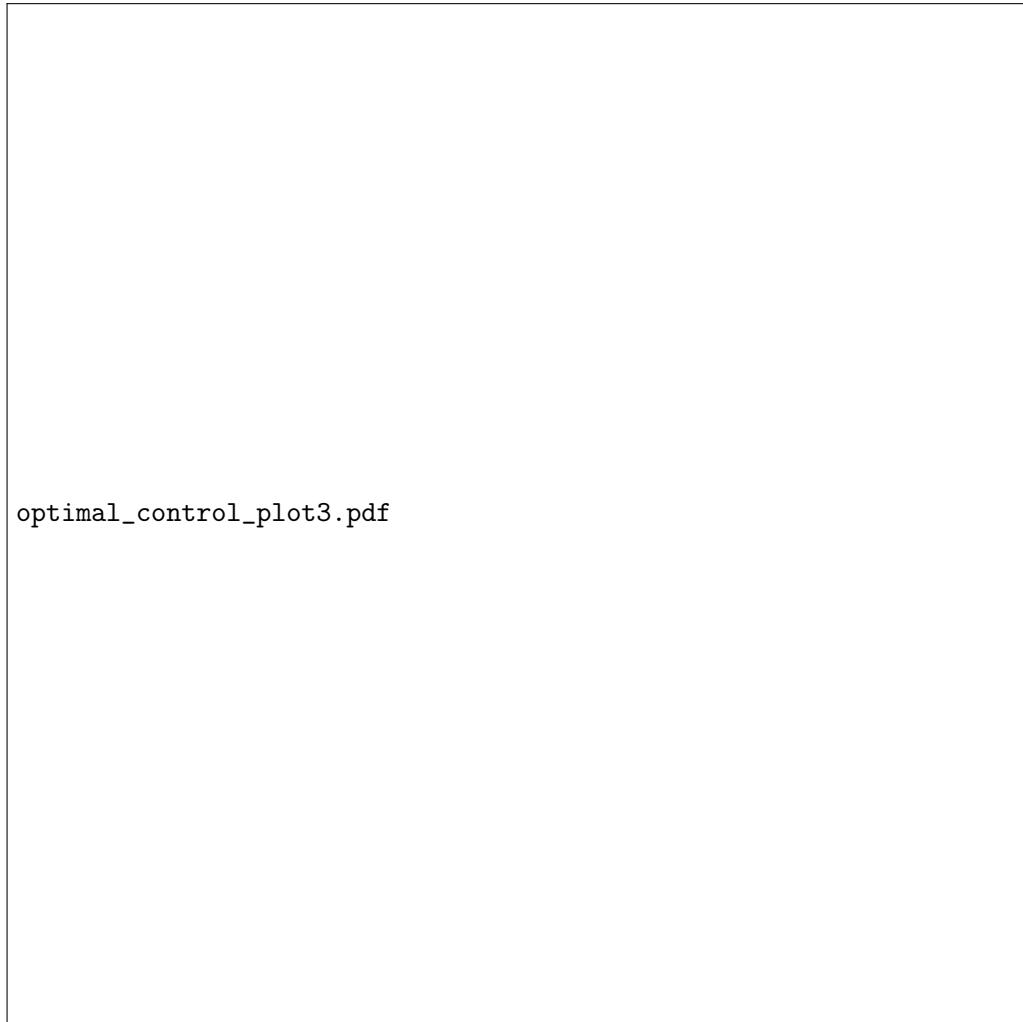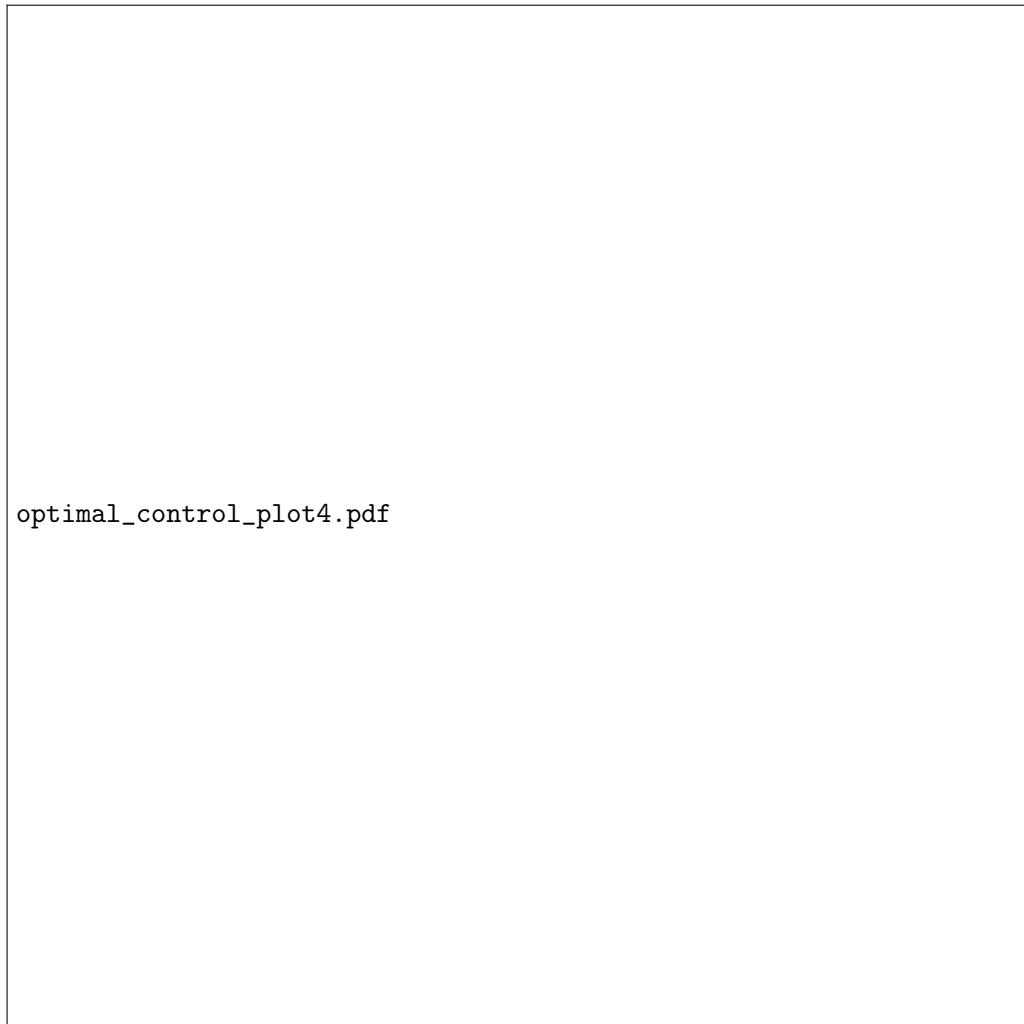
Figure 3: Parameter sensitivity analysis.

5 2D Visualization

optimal_control_plot4.pdf

Figure 4: Two-dimensional field visualization.

6 Distribution Analysis

optimal_control_plot5.pdf

Figure 5: Statistical distribution analysis.

# 7 Time Series

optimal_control_plot6.pdf

Figure 6: Time series visualization.

8 Results Summary

9 Conclusions

This analysis demonstrates the computational approach to optimal control.