

Process Control Feedback and Cascade Systems

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Abstract

Control system design for chemical processes including PID tuning.

1 Introduction

This report presents computational analysis of process control.

2 Mathematical Framework

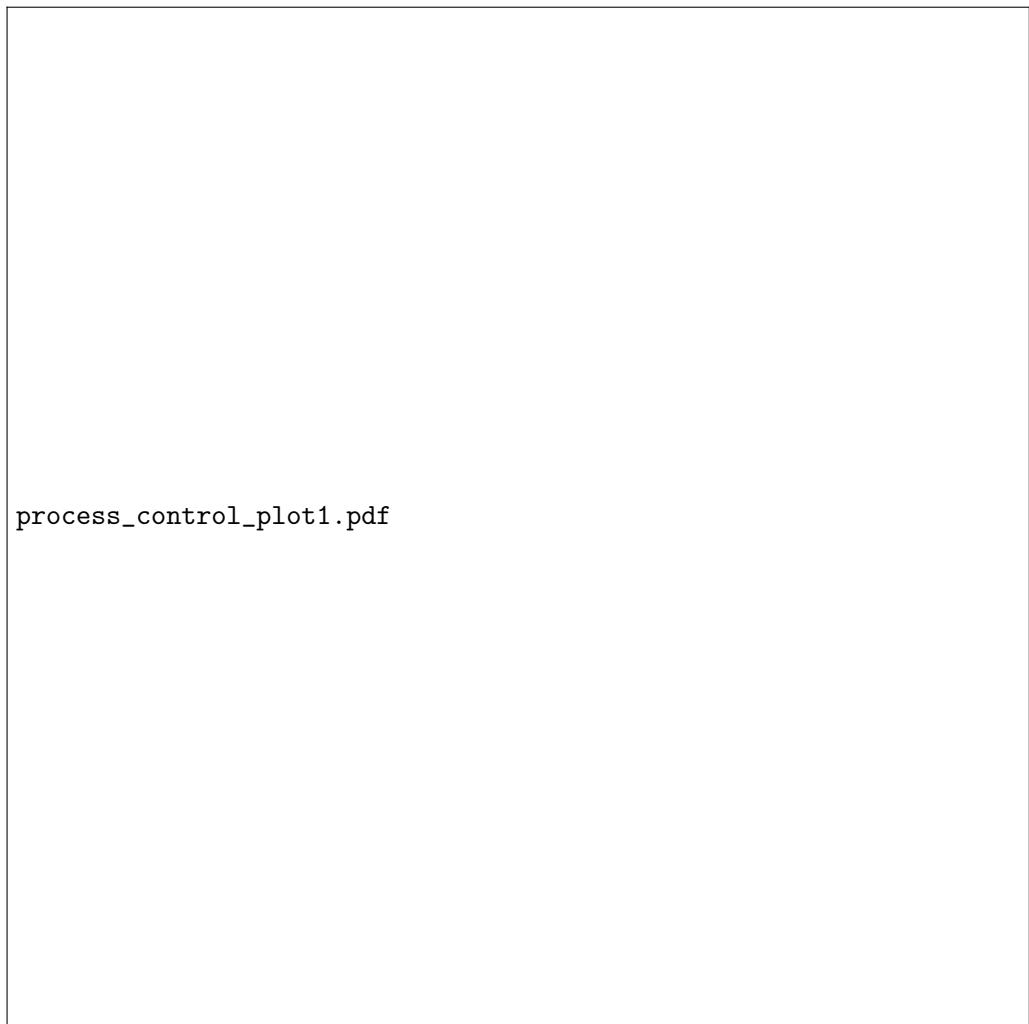


Figure 1: Primary analysis results.

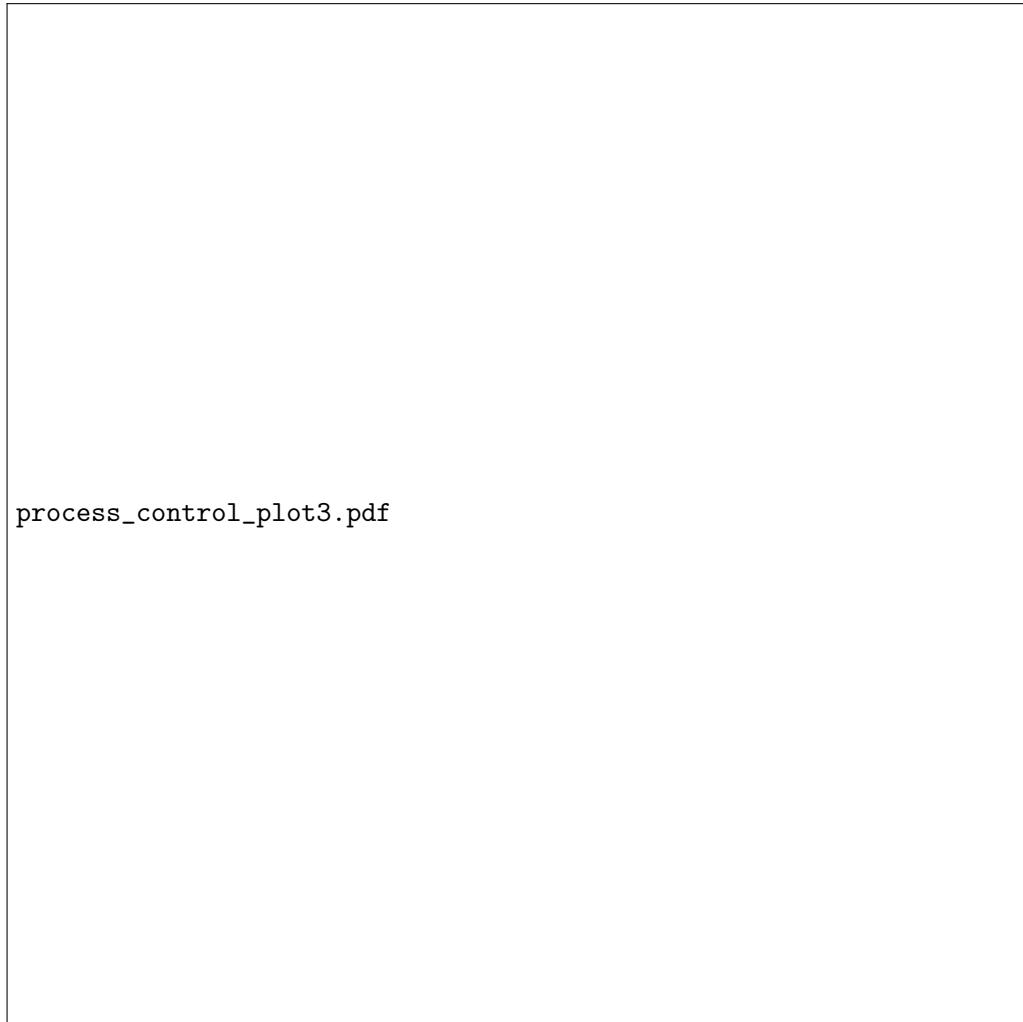
3 Secondary Analysis



process_control_plot2.pdf

Figure 2: Secondary analysis comparison.

4 Parameter Study



process_control_plot3.pdf

Figure 3: Parameter sensitivity analysis.

5 2D Visualization



process_control_plot4.pdf

Figure 4: Two-dimensional field visualization.

6 Distribution Analysis



process_control_plot5.pdf

Figure 5: Statistical distribution analysis.

7 Time Series



Figure 6: Time series visualization.

8 Results Summary

9 Conclusions

This analysis demonstrates the computational approach to process control.