NAME SURNAME

Your title goes here

Thesis submitted for the degree of Master in Science to the Escola Politécnica of Universidade de São Paulo.

São Paulo
2016

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Thesis submitted for the degree of Master in Science to the Escola Politécnica of Universidade de São Paulo.

Concentration field:

Systems Engineering (example)

Advisor:

Prof. Dr. advisor name

São Paulo
2016

Catalogação-na-publicação

Barbieri, Fabio
Linear systems with Markov jumps and multiplicative noises - The constrained total variance problem / F. Barbieri -- São Paulo, 2016.
104 p.

Dissertação (Mestrado) - Escola Politécnica da Universidade de São Paulo. Departamento de Engenharia de Telecomunicações e Controle.

1.Controle estocástico 2.Sistemas lineares 3.Controle ótimo 4.Variância máxima 5.Otimização de carteiras de investimentos I.Universidade de São Paulo. Escola Politécnica. Departamento de Engenharia de Telecomunicações e Controle II.t.

To my family

ACKNOWLEDGEMENT

I thank all the people who...

RESUMO

Neste trabalho, estudamos o problema...

Palavras-chave: Controle estocástico. Sistemas lineares. Controle ótimo. Variância máxima. Otimização de carteiras de investimento.

ABSTRACT

In this work we study the...

Keywords: Stochastic control. Linear systems. Optimal control. Maximum variance. Portfolio optimization.

LIST OF FIGURES

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LIST OF ABBREVIATIONS

USP	Universidade de São Paulo
CFS	Courtois-Finiasz-Sendrier

LIST OF SYMBOLS

$\Delta(h)$ bla bla

CONTENTS

1 INTRODUCTION

Here you should give the context, justifications...

Do yourself a favor and follow the structure guidelines in the file $Research\_structure\_guidelines.txt$. It should make your life easier.

I left parts of my thesis as an example in my GitHub respository (https://github.com/fbarbieri77). There you will find the syntax of a variety of commands about how to cite, include figures, tables, reference equations, formatting, etc.

In order to translate the default texts to another language you will need only to change the text at the end of the file "/EPUSPclass/definitions.tex" and change the language in the command line $usepackage[english]babel$ to $usepackage[brazil]babel$, for instance, in the main file. Another option is to use the Portuguese version in my GitHub respository.

Have fun!!!

2 LITERATURE REVIEW

In your thesis you should update the file */doc/bibliography.bib* with your literature review papers. Then you need to update the file *thesis_main.bbl* everytime you mention a new paper in the document. I use TexMaker for linux and it is done by just pressing F11.

Examples of citation of one paper and multiple papers: We have studies that considered ... (LIM; ZHOU, 1999), or cross terms ... (LUO; FENG, 2004), or even studies that... (LIU; YIN; ZHOU, 2005; LI; ZHOU; RAMI, 2003; ZHU, 2005).

3 METHODOLOGY

Introduction here...

3.1 Notation and definitions

4 MAIN RESULTS

5 NUMERICAL EXAMPLES

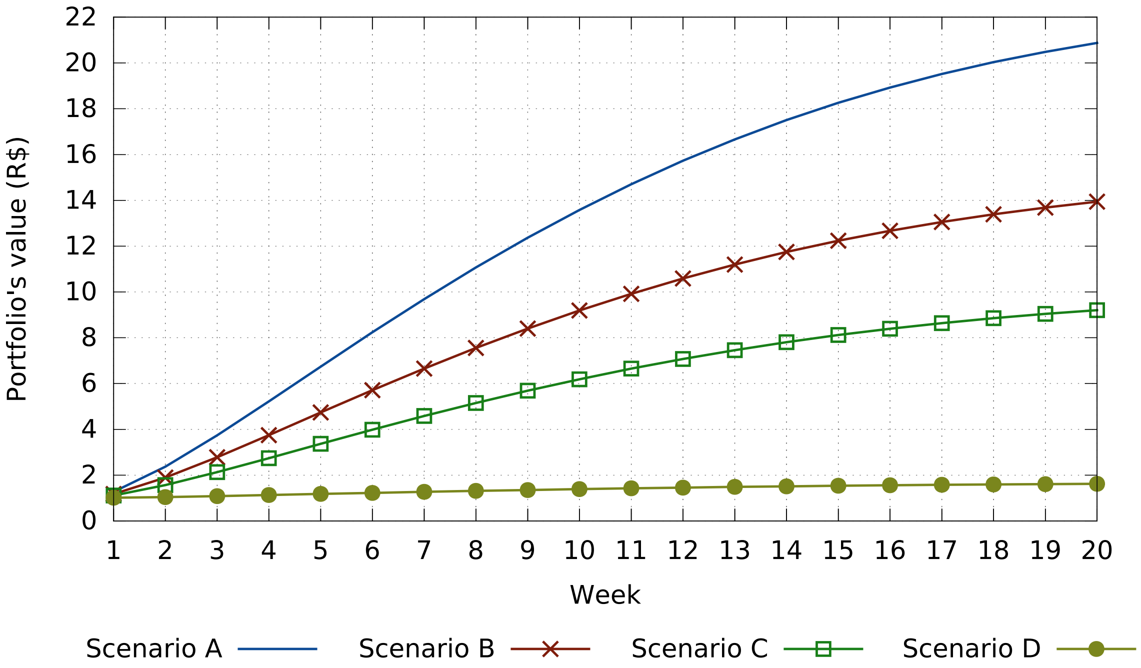
In this chapter we illustrate the...

Table 1 - Scenarios definition.

		Risk parameters $t = 1, 2, \ldots, 20$			Restriction *(R$)*
Scenario	Problem applied	$\nu(t)$	$\xi(t)$	$\beta(t)$	α
A	$PU(\nu, \xi)$	1.0	1.0	-	-
B	$PC(\nu, \beta, \alpha)$	1.0	-	1.0	50.0
C	$PC(\nu, \beta, \alpha)$	1.0	-	1.0	20.0
D	$PC(\nu, \beta, \alpha)$	1.0	-	1.0	0.1

Source: Author.

Figure 1 - System's output for all scenarios.



Source: Author.

6 CONCLUSION

In this work we have considered ...

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LIU, Y.; YIN, G.; ZHOU, X. Y. Near-optimal controls of random-switching lq problems with indefinite control weight costs. **Automatica**, v. 41, p. 1063–1070, 2005.

LUO, C.; FENG, E. Generalized differential riccati equation and indefinite stochastic lq control with cross term. **Applied Mathematics and Computation**, v. 155, p. 121–135, 2004.

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APPENDIX A – NUMERICAL DATA OF SIMULATIONS

Example of long tables that cross pages.

Table 2: System's output for all scenarios.

Time	Scenario 1	Scenario 2	Scenario 3	Scenario 4
1	1.3	1.2	1.1	1.0
2	2.4	1.9	1.6	1.0
3	3.7	2.8	2.1	1.1
4	5.2	3.7	2.7	1.2
5	6.7	4.7	3.4	1.2
6	8.2	5.7	4.0	1.3
7	9.7	6.7	4.6	1.3
8	11.1	7.6	5.2	1.4
9	12.4	8.4	5.7	1.4
10	13.6	9.2	6.2	1.4
11	14.7	9.9	6.7	1.5
12	15.7	10.6	7.1	1.5
13	16.7	11.2	7.5	1.5
14	17.5	11.7	7.8	1.5
15	18.3	12.2	8.1	1.6
16	18.9	12.7	8.4	1.6
17	19.5	13.1	8.6	1.6
18	20.0	13.4	8.9	1.6
19	20.5	13.7	9.0	1.6
20	20.9	13.9	9.2	1.6
1	1.3	1.2	1.1	1.0

Continued on next page

Time	Scenario 1	Scenario 2	Scenario 3	Scenario 4
2	2.4	1.9	1.6	1.0
3	3.7	2.8	2.1	1.1
4	5.2	3.7	2.7	1.2
5	6.7	4.7	3.4	1.2
6	8.2	5.7	4.0	1.3
7	9.7	6.7	4.6	1.3
8	11.1	7.6	5.2	1.4
9	12.4	8.4	5.7	1.4
10	13.6	9.2	6.2	1.4
11	14.7	9.9	6.7	1.5
12	15.7	10.6	7.1	1.5
13	16.7	11.2	7.5	1.5
14	17.5	11.7	7.8	1.5
15	18.3	12.2	8.1	1.6
16	18.9	12.7	8.4	1.6
17	19.5	13.1	8.6	1.6
18	20.0	13.4	8.9	1.6
19	20.5	13.7	9.0	1.6
20	20.9	13.9	9.2	1.6

Source: Author.