MPC for uncertain systems using the Youla parameterizations

Several approaches have been taken in the past to deal with uncertainty in constrained predictive control. The major drawbacks of these efforts are usually either conservativeness and/or on-line computational complexity. In this work we examine the possibility of dealing with uncertainty through the use of the primary and the dual Youla parameterizations. The dual Youla parameter can be seen as a frequency weighted measure of the uncertainty and the primary Youla parameter can be seen as a controller for this uncertainty. The work is an application of the methodology in [12] to constraint control.

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling, Automation, Department of Electrical Engineering
Authors: Thomsen, S. C. (Intern), Niemann, H. H. (Intern), Poulsen, N. K. (Intern)
Keywords: (Model predictive control, Uncertain systems, Youla parameterization)
Pages: 3421-3426
Publication date: 2008

Host publication information
Title of host publication: Proceedings of the 48th IEEE Conference on Decision and Control
Publisher: IEEE
ISBN (Print): 978-1-4244-3124-3
Main Research Area: Technical/natural sciences
Conference: 47th IEEE Conference on Decision and Control, Cancun, Mexico, 09/12/2008 - 09/12/2008
Electronic versions:
Thomsen.pdf
DOIs:
10.1109/CDC.2008.4738799

Bibliographical note
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Source: orbit
Source-ID: 222426
Publication: Research - peer-review › Article in proceedings – Annual report year: 2008