



Im Rahmen des Kolloquiums des
Graduiertenkollegs Algorithmic Optimization
findet am

Freitag, dem 9. Juni 2017
10:30 Uhr s.t.
Hörsaal 10

folgender Vortrag statt:

Nonlinear Programming Properties and Formulations for Nonlinear and Economic Model Predictive Control

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Nonlinear Model Predictive Control (NMPC) is a powerful approach for on-line optimization of nonlinear, dynamic systems. This talk explores nonlinear programming (NLPs) formulations that ensure the stability and robustness of NMPC strategies. In particular, NLPs that satisfy familiar second order and regularity conditions have solutions that are continuous and differentiable with respect to perturbations of the problem data, and are important prerequisites for nominal and ISS stability of NMPC controllers. Moreover, ensuring these properties is not difficult through reformulation of the NLP subproblem and addition of exact penalty and barrier terms. This framework is also essential for the extension of NMPC to sensitivity-based NMPC and economic NMPC, thus leading to efficient, on-line optimization strategies that guarantee stable and robust performance. The results of this analysis have been implemented within an optimization modeling platform and are demonstrated on challenging case studies drawn from chemical processes.

Gastgeber:

Prof. Dr. Ekkehard Sachs

Kolloquiums Kaffee ab 10:00 Uhr im Raum E 10