

EINLADUNG ZUM VORTRAG

Es spricht

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zum Thema:

„Multiobjective Model Predictive Control“

Abstract :

Model Predictive Control (MPC) is a well-established control strategy that can be used to approximate optimal control problems on a very long or infinite horizon. The basic idea of MPC lies in solving the optimal control problem on a short(er) horizon and applying only the first piece of the obtained optimal control to the system. This procedure is repeated at each time instant.

Two fundamental questions typically arise when MPC schemes are investigated: Firstly, whether the closed-loop trajectory behaves as desired (e.g. stabilization of the system), secondly, if the performance of the MPC feedback is 'good' (e.g. approximately optimal).

In this talk we will focus on the second aspect for multiobjective (MO) optimal control problems. In particular, we will deal with the question how multiobjective optimal control problems can be incorporated into the framework of MPC. It will be demonstrated that choosing 'appropriate' Pareto-optimal solutions to the MO optimization problems in the MPC procedure yields a bounded performance. In contrast to existing approaches, in which the multiple objectives are combined (e.g. weighted sum) or prioritized, our approach allows for a performance analysis for all objectives and does not depend on a specific coupling or MO optimization method.

Montag, 27. März 2017, 10:00 Uhr, Raum C 325 im Curiebau

Alle Interessenten sind herzlich eingeladen.

Ilmenau, 20. März 2017

Prof. Dr. Gabriele Eichfelder, AG Optimierung