Universität Konstanz

Fachbereich Mathematik und Statistik

Prof. Dr. S. Volkwein, Dr. G. MÃ¼ller

Wir laden recht herzlich zu einem Vortrag im Rahmen des

Oberseminars Numerische Optimierung

ein:

Herr Manuel Schaller

(Universität Bayreuth)

Specialized Adaptive Algorithms for the Model Predictive Control of PDEs

Dienstag, 5. November 2019

Beginn: **10:15 Uhr**
Raum: **D406**

Interessenten sind herzlich willkommen!

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Abstract: Model Predictive Control (MPC) is a control method in which the solution of optimal control problems on infinite or indefinitely long horizons is split up into the successive solution of optimal control problems on relatively short finite time horizons. Only a first part with given length of this solution is implemented as a control for the longer, possibly infinite horizon.

Motivated by this application, we want to construct adaptive algorithms for the solution of optimal control problems governed by parabolic partial differential equations which are tailored to this MPC-context. More specifically, as the feedback entering the system is only the initial part of the control, we employ goal oriented error estimation in time and space to obtain high accuracy of this feedback.

We present a stability property for a wide class of optimal control problems that one the one hand allows for keeping numerical effort low when using adaptive grid refinement, and on the other hand can be used to derive a quantitative turnpike property.

(eingeladen von Dr. Georg MÃ¼ller)