Universität Konstanz
Fachbereich Mathematik und Statistik

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Arbeitsgruppe Numerik

08.10.2012

Im Oberseminar

Numerik

wird am

Montag, dem 15. Oktober 2012,

folgender Vortrag gehalten:

Herr Andreas Schmidt
Universität Heidelberg

POD Reduced-Order Models in Direct Optimization

Abstract:
To solve optimal control problems (OCP) that involve PDE constraints it is distinguished between the direct and the indirect approach. This means that we either 'first discretize then optimize' or 'first optimize then discretize' the OCP. Proper Orthogonal Decomposition (POD) as model reduction technique is typically applied in the indirect setting. We consider the use of POD in a direct-approach to solve the OCP. A naive application of POD results in a reduced-order model that lacks the essential property to reflect derivative information of the underlying high-fidelity model. We overcome this deficit by including the necessary derivative information obtained from the high-fidelity model in the reduced-order model. The resulting 'enriched' model has beneficial properties, which we want to investigate. Numerical examples are given to illustrate the theoretical results.

Zeit: 11.00 Uhr
Raum: F 427

Interessenten sind herzlich willkommen!

gez. Stefan Volkwein