
Universität Konstanz
Fachbereich Mathematik und Statistik

**Arbeitsgruppe
Numerik**

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2. Februar 2015

Im Oberseminar

Numerik

wird am

Dienstag, dem 10. Februar 2015

folgender Vortrag gehalten:

Frau Dr. Ira Neitzel

Technische Universität München

Finite element discretization error estimates for state- constrained Dirichlet control problems

Zeit: 13:30 Uhr

Raum: G 308

Interessenten sind herzlich willkommen!

gez. Stefan Volkwein

Abstract: (joint work with Mariano Mateos)

In this talk, we derive a priori error estimates for the finite element discretization of Dirichlet control problems with pointwise state constraints. The problem class is particularly challenging due to the low regularity of the states with L^2 -Dirichlet boundary controls. To obtain an optimality system of Karush-Kuhn-Tucker type with Lagrange multipliers for the pointwise state constraints prescribed in the interior of a 2D polygonal domain, we make use of higher interior regularity results for harmonic functions. Based on these results, finite element error estimates are derived with techniques that separate the regularity-limiting influences of the corners of the domain on the one hand, and the support of the Lagrange multiplier in the interior of the domain on the other hand. currently under investigation.