



Mathematisches Kolloquium

Am Freitag, den 26. Oktober 2012 spricht um 14 Uhr c.t. im Hörsaal IV
der Fachrichtung Mathematik (Gebäude E24)

Prof. Sergey E. Mikhailov

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über das Thema:

Generalized Co-normal Derivatives and Boundary Value Problems for Elliptic PDEs in Sobolev spaces on Lipschitz domains

Abstract: Elliptic PDE systems of the second order on a Lipschitz domain are considered in the talk. For functions from the Sobolev space $H^s(\Omega)$, $\frac{1}{2} < s < \frac{3}{2}$, a definition of non-unique generalized co-normal derivative is given, which is related to possible non-unique extensions of a partial differential operator and PDE right hand side from the domain Ω to its boundary. For a (rather wide) subspace of $H^s(\Omega)$, the unique canonical co-normal derivative is also defined and it is proved that the canonical co-normal derivative coincides with the classical one when the both exist. A generalization of the boundary value problem variational settings, which makes them insensitive to the co-normal derivative inherent non-uniqueness is also discussed.

The talk is related to papers:

- S. E. Mikhailov. Traces, extensions and co-normal derivatives for elliptic systems on Lipschitz domains. *J. Math. Analysis and Appl.*, **378**, 324–342, 2011.
- S. E. Mikhailov. Solution regularity and co-normal derivatives for elliptic systems with non-smooth coefficients on Lipschitz domains, (submitted for publication).

Der Gast wird von Prof. Dr. Rjasanow betreut.

Alle Interessenten sind zum Vortrag herzlich eingeladen.

Kaffee ab 13.45 Uhr im Konferenzraum der Mathematik (EG - 1.03)

Die Dozenten der Mathematik