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Sobolev spaces with mixed weights and the Poisson equation on angular domains

We introduce and analyse a class of weighted Sobolev spaces with mixed weights on angular domains. The weights are based on both the distance to the boundary and the distance to the one vertex of the domain. Moreover, we show how the regularity of the Poisson equation can be analysed in the framework of these spaces by means of the Mellin transform, provided the integrability parameter equals two. Our main motivation comes from the study of stochastic partial differential equations and associated degenerate deterministic parabolic equations.

The talk is based on a recent joint work [1] with Cornelia Schneider (FAU Erlangen) and Petru A. Cioica-Licht (Uni Kassel).

References:

[1] P.A. Cioica-Licht, C. Schneider and M. Weimar: Sobolev spaces with mixed weights and the Poisson equation on angular domains. Submitted preprint (arXiv:2409.18615), 2024.

Ort: Raum 30.02.003 (Mathematik West, 2.Stock)   Zeit: Dienstag, 28.01.2025, 13:00 Uhr

Zu diesem Vortrag laden wir Sie herzlich ein.
You are cordially invited to this lecture.

gez. Prof. Dr. Alfio Borzì
gez. Prof. Dr. Frank Werner