

EINLADUNG

zum

HABILITATIONSVORTRAG

Mgr. dr. Wojciech Górny

(Universität Wien, Fakultät für Mathematik)

**“Geometric problems that involve minimization
of the total variation”**

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Abstract:

In my habilitation thesis, I study functionals that involve the so-called anisotropic total variation. The results can be divided into two groups. In the first part of the thesis, I study the gradient flows of such functionals in metric measure spaces using a semigroup approach. In particular, I investigate the impact of the underlying geometry on the behavior of solutions. In the second part of the thesis, I focus on the problem of minimizing the anisotropic total variation under Dirichlet conditions in dimension two.

In this lecture, I will present results from the second part of my thesis. Due to the linear growth of the functionals we consider, the existence of solutions is not guaranteed as the boundary condition may not be attained pointwise. In fact, the existence, the uniqueness, and the regularity of solutions depend on the specific anisotropy, the geometry of the domain, and the boundary data. Expanding on the equivalence between the least gradient problem and the optimal transport problem, we study the regularity and the stability of solutions in the anisotropic case. We also discuss the dependence of the set of admissible boundary data on the anisotropy, showing that the trace spaces associated with any two different smooth anisotropies are also distinct.

Freitag, 18. Oktober 2024

09:00 Uhr bis 09:45 Uhr

Besprechungszimmer 2, 2 OG.

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Oskar-Morgenstern-Platz 1

Michael Eichmair

Radu Bot