



Mathematisches Kolloquium

Am Freitag, den 27. Juli 2012, spricht um **14 Uhr c.t.** im Hörsaal IV
der Fachrichtung Mathematik (Gebäude E2 4)

Frau Dr. Lisa Beck

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(Hausdorff center for mathematics)

über das Thema: **Uniqueness and boundary behavior of minimal graphs**

Abstract: For a smooth function $u: \Omega \rightarrow \mathbb{R}$ the n -dimensional area of its graph over a bounded domain Ω is given by

$$\int_{\Omega} \sqrt{1 + |Du|^2} \, dx .$$

A natural question is whether or not minimizers of this functional exist among all functions taking prescribed boundary values (one may think of minimizers as soap films realizing the least surface area among all surfaces spanned by a wire). It turns out that solutions of the least area problem exist only in a suitably generalized sense. This formulation is based on an extension of the original functional via relaxation, where attainment of the prescribed boundary values is not mandatory, but non-attainment is penalized. The aim of this talk is to first give some heuristics on classical results concerning regularity and uniqueness of minimal graphs. We then present some modern techniques, which allow to address these issues for related vectorial minimization problems. Finally, we study the boundary behavior of minimal graphs and discuss the optimality of a result due to Miranda which states that continuous boundary values are always attained on pseudo-convex domains.

Der Gast wird von Prof. Dr. M. Fuchs und Prof. Dr. M. Bildhauer betreut.

Alle Interessenten sind zum Vortrag herzlich eingeladen.

Tee und Kaffee ab 15.30 Uhr im Didaktiklabor (EG - 1.14) .

Die Dozenten der Mathematik