



Institut für Angewandte Analysis
Universität Ulm
89069 Ulm

ulm university universität
uulm

Prof. Dr. Wolfgang Arendt
Prof. Dr. André Schlichting
Prof. Dr. Anna Dall'Acqua
Prof. Dr. Rico Zacher

OBERSEMINAR IM INSTITUT FÜR ANGEWANDTE ANALYSIS

Sommersemester 2025

Im Rahmen des Oberseminars spricht am Mittwoch, den **21. Mai 2025**:

FLORIAN GRUEN

Kyoto University

Regularity and structure of non-planar p -elasticae

The talk concerns regularity and structure results for p -elasticae in $\mathbb{R}^n$, with arbitrary $p \in (1, \infty)$ and $n \geq 2$. Planar p -elasticae are already classified and known to lose regularity. We show that every non-planar p -elastica is analytic and three-dimensional, with the only exception of flat-core solutions of arbitrary dimensions. Subsequently, we classify pinned p -elasticae in $\mathbb{R}^n$ and, as an application, establish a Li–Yau type inequality for the p -bending energy of closed curves in $\mathbb{R}^n$. This extends previous works for $p = 2$ and $n \geq 2$ as well as for $p \in (1, \infty)$ and $n = 2$.

Der Vortrag findet in **Raum 1.42, Helmholtzstr. 22** statt.

Beginn: 14 Uhr (c.t.). Alle Interessierten sind herzlich eingeladen.

W. Arendt, A. Dall'Acqua, A. Schlichting, R. Zacher.