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OBERSEMINAR IM INSTITUT FÜR ANGEWANDTE ANALYSIS

Wintersemester 2025/26

Im Rahmen des Oberseminars spricht am Montag, den **26. Januar 2026**:

DELIO MUGNOLO
FernUniversität in Hagen

Heat Kernels and Geometry on Metric Graphs

The heat content of a domain, originally explored by Davies and van den Berg, is defined via the heat kernel of the heat equation. Much like the ground state energy, its significance lies in its ability to encode fundamental geometric properties. In this talk, we extend these concepts to the setting of metric graphs, introducing both the heat content and its integrated counterpart, the torsional rigidity. Following a brief overview of the theory of landscape functions, we establish new geometric bounds for these quantities. By employing graph surgery and more refined analytical tools, we demonstrate how these bounds facilitate a novel approach to geometric inverse problems on graphs.

Der Vortrag findet in **Raum E.60, Helmholtzstr. 18** statt.
Beginn: 16 Uhr (c.t.). Alle Interessierten sind herzlich eingeladen.

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