FACHBEREICH 08

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Einladung zum Vortrag
im Oberseminar Analysis

Invariance Properties
of Laplacians on metric graphs

Paul Beckermann (TU Kaiserslautern)

We investigate the semigroups corresponding to Laplacians on metric graphs concerning certain invariance properties, in particular reality, positivity and L^∞-contractivity.

For arbitrary boundary conditions (such that the corresponding Laplacian still generates a semigroup), it can be shown that there is no quadratic form associated with that Laplacian in the standard edge-wise L^2-space. However, it is possible to construct a quadratic form associated with the Laplacian in a Hilbert space that is equivalent to the usual edge-wise L^2-space.

With the help of that form and invariance criteria for quadratic forms, we then derive necessary and sufficient conditions for the invarainces of the semigroup only depending on the quasi-Weierstraß form or the Cayley transform of the coupling boundary conditions.

This is based on my Master's thesis supervised by Amru Hussein.

Alle Interessierten sind herzlich eingeladen!

Datum: Dienstag, 13.12.2022
Uhrzeit: 9-10 Uhr s.t.
Ort: 04-522