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Non-self-adjoint graphs

On finite metric graphs Laplace operators subject to general non-self-adjoint boundary conditions imposed at graph vertices are considered. A regularity criterion is proposed and spectral properties of such regular operators are investigated, in particular similarity transforms to self-adjoint operators. Concrete examples are discussed exhibiting that non-self-adjoint boundary conditions can yield to unexpected spectral features.

The talk is based on joint work [1] with David Krejčiřík (Czech Technical University in Prague) and Petr Siegl (Queen's University Belfast).

References

[1] A. Hussein, D. Krejčiřík, and P. Siegl, *Non-self-adjoint graphs*, Transactions of the American Mathematical Society **4** (2015), no. 367, 2921 – 2957.