

Inverse Spectral Problems for Sturm-Liouville Equation on Trees

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joint work with R. Carlson

It turns out that well known Ambarzumian's theorem for Sturm-Liouville operator on an interval with Neumann boundary conditions at the endpoints can be generalized to the case of Sturm-Liouville operators on metric tree domains.

For the case of Dirichlet boundary conditions at the exterior vertices and continuity and Kirchhoff conditions at the interior vertex the inverse problem of recovering the potentials on the edges from the spectrum of the problem and the spectra of Dirichlet problems on the edges is solved for star shaped graphs.

The talk is based on results of [1], [2].

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References

- [1] R. Carlson, V. Pivovarchik. Ambarzumian's theorem for trees. *Electronic Journal of Differential Equations*, Vol. 2007(2007), No. 142, 1-9.
- [2] V. Pivovarchik. Inverse problem for the Sturm-Liouville equation on a star-shaped graph. *Mathematische Nachrichten*, Vol. 280, No.13-14 (2007) 1595.