

Pseudospectra of Schrödinger operators with complex potentials

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Spectral analysis is the key tool in the investigation of linear evolution problems and approximations of non-linear ones. While the spectrum indeed determines the properties of the system if the underlying operator is normal, this may change dramatically in "highly non-normal" cases and lead to false conclusions in applications. The notion of pseudospectrum captures the non-normality of operators and allows for the description of spectral instabilities, reliability of approximations or decay rates of the associated time evolution problems.

In this talk, I give an introduction to pseudospectral analysis and present some of recent developments in the analysis of Schrödinger operators with complex potentials.

The talk is based on:

- [1] B. Mityagin and P. Siegl: *Local form-subordination condition and Riesz basisness of root systems*, Journal d'Analyse Mathématique, to appear, arXiv:1608.00224
- [2] D. Krejčířík and P. Siegl: *Pseudomodes for Schrödinger operators with complex potentials*, Journal of Functional Analysis, to appear, arXiv:1705.01894.