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Diverging eigenvalues in domain truncations
of Schrödinger operators with complex potentials

We revisit spectral convergence of domain truncations of Schroedinger operators with complex potentials studied in [BST-2017]. In particular, we analyze the occurring diverging eigenvalues and describe their asymptotic behavior. Our approach also applies for diverging eigenvalues in the strong coupling regime for the imaginary part of the potential. The main tool is the norm resolvent convergence of transformed truncated operators to limiting Airy type operators.

The talk is based on a joint work [SS-21] with I. Semoradova (Prague).

REFERENCES:

[BST-17] Boegli, S., Siegl, P., and Tretter, C.: Approximations of spectra of Schroedinger operators with complex potential on $\mathbb{R}^d$, 2017, *Comm. PDE* 42, 1001–1041.

[SS-21] Semoradova, I., and Siegl, P: Diverging eigenvalues in domain truncations of Schroedinger operators with complex potentials, arXiv:2107.10557 [math.SP]