



MAFIA - the seminar you can't refuse

Resolvent estimates for one-dimensional Schrödinger operators with complex potentials

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Abstract: Let $H = -\frac{d^2}{dx^2} + V$ be a Schrödinger operator acting on $L^2(\mathbb{R})$ where the potential V is a complex function satisfying certain regularity and growth conditions. We study the asymptotic behaviour of the norm of the resolvent, $\|(H - \lambda)^{-1}\|$, where the complex number λ lies near the numerical range of the operator. We derive explicit estimates along the imaginary axis which are, in a certain sense, optimal. Our presentation will describe the hypotheses on V and include examples, an sketch of the proof of the result and directions for further research.