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## Trace formulas for Schrödinger operators from the view point of complex analysis

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(Submitted on 13 Jul 2011)

We consider the Schr{\"o}dinger operator  $-\Delta + V(x)$  in  $L^2({bf R}^3)$ with a real short-range (integrable) potential V. Using the associated Fredholm determinant, we present new trace formulas, in particular, the ones in terms of resonances and eigenvalues only. We also derive expressions of the Dirichlet integral, and the scattering phase. The proof is based on the change of view points for the above mentioned problems from the operator theory to the complex analytic (entire) function theory.

Comments:17 pagesSubjects:Spectral Theory (math.SP); Analysis of PDEs (math.AP)Cite as:arXiv:1107.2687v1 [math.SP]

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