

Non-Hermitian Hamiltonians and Fluctuations: Absorption –Fluctuation Theorem

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Abstract:

The many-body collision phenomena that require the use of non-Hermitian Hamiltonians are bound to require the addition to the calculated cross-sections an incoherent contribution that arise from fluctuations. This entails the working of what we may call the Absorption-Fluctuation Theorem (AFT). We discuss this in the context of the Optical Background Representation [1] of the Feshbach theory of reactions [2, 3]. We give a brief account of the theory and discuss its applications in chaotic scattering [4]. The recently observed anomalous neutron width distribution in Platinum[5], is considered and discussed using our approach. In particular, Gaussian assumptions concerning the resonance amplitudes are found to require modifications [6], which may partially resolve the anomaly. More general consequences of the AFT are also discussed.

References:

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