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Quantum resonances in chaotic scattering

In mathematical work on quantum mechanics we are often interested in the density of states in the semi-classical limit. The work of Sjöstrand on modified Weyl upper bounds showed a relation between the density of states in quantum chaotic scattering and the dimension of the classical trapped set.

This work motivated recent rigorous and numerical work on quantum resonances in chaotic scattering, in particular estimates on classical dynamical zeta functions for Schottky groups, where the trapped set is related to the limit set of the group.

In my talk I will explain these concepts and present the recent numerical results in potential, obstacle, and geometric scattering (joint work with L. Guillopé, K. Lin, W. Lu, and S. Sridhar).