

Maciej Zworski

Title: Resonances as viscosity limits.

Abstract: In practically all situations resonances can be defined as limits of L^2 eigenvalues of operators which regularize the Hamiltonian at infinity. For instance, Pollicott—Ruelle resonances in the theory of dynamical systems are given by viscosity limits: adding a Laplacian to the generator of an Anosov flow gives an operator with a discrete spectrum; letting the coupling constant go to zero turns eigenvalues into the resonances (joint work with S Dyatlov).

This principle seems to apply in all other settings where resonances can be defined and I will explain it in the case of black box Euclidean scattering (after reviewing that general set-up). The method has also been numerically investigated in the chemistry literature as an alternative to complex scaling.