THE SCHRÖDINGER TRACE FOR THE PERTURBED HARMONIC OSCILLATOR

JARED WUNSCH

The propagator for the homogeneous quantum harmonic oscillator is (conformally) periodic with period 2π, corresponding to the periodicity of the underlying classical motion. It has been known since classic work of Zelditch that perturbation of the potential by a 0-symbol preserves this periodicty at the level of propagation of singularities. On the other hand, Doi showed that perturbation by 1-symbols *does* change the location of reconstructed singularities. I will discuss some of these older results and then turn to recent work, joint with Moritz Doll and Oran Gannot, in which we study the effects on the *Schrödinger trace* of certain kinds of 1-symbol perturbations, together with their consequences for spectral asymptotics. In particular, we obtain criteria for an improved remainder term in Weyl's law for perturbations of the harmonic oscillator.