

Diffractive trapping and resonances on log curves

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Abstract: Consider an open quantum system where classical particle trajectories escape to infinity, but some energy of waves is trapped due to diffractive effects. In these settings (which include manifolds with conic singularities, exteriors of polygons, and Hamiltonians whose potentials have singularities) one often finds that scattering resonances concentrate on one or more logarithmic curves in the lower half plane. I will review some settings where this is at least partly understood, and then describe some recent work (joint with Datchev and Marzuola) in which we are able to say something more precise about the location of resonances in one of the simplest such settings: several h -dependent delta-potentials on the real line.