SPEAKER:
Jacob Shapiro, Purdue University

TITLE:
Resolvent estimates with application to wave decay

ABSTRACT:
We study weighted resolvent bounds for semiclassical Schrodinger operators in dimension two. We require the potential function to be Lipschitz with long range decay. The resolvent norm grows exponentially in the inverse semiclassical parameter, but near infinity it grows linearly. The main tool of the proof is a global Carleman estimate. We apply the resolvent estimates along with Stone’s formula to show logarithmic local energy decay for the wave equation with a wavespeed that is a compactly supported Lipschitz perturbation of unity. The decay rate is the same as that proved by Burq in the case of a smooth wavespeed outside an obstacle.