TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Room 617 Wachman Hall

Monday, April 22nd, 2024, 2:30 p.m.

Local energy decay for the acoustic wave equation in low regularity

by Jacob Shapiro

University of Dayton

Abstract: We discuss recent results and work in progress on local energy decay for the acoustic wave equation in low regularity. The main challenge is to establish suitable control over the resolvent of the associated Helmholtz operator at both large and small frequencies. For large frequencies, we employ (after rescaling) a semiclassical Carleman estimate. Near zero frequency we obtain a resolvent expansion by perturbative methods. Both tools are sensitive to the decay of the coefficients near infinity.