Temple University Mathematics Colloquium

Peter Perry

University of Kentucky

will speak on

Resonances in Geometric Scattering Theory

ABSTRACT: Geometric scattering theory is the study of scattering for natural geometric operators on non-compact Riemannian manifolds. Resonances are spectral data which play much the same role for non-compact Riemannian manifolds as the eigenvalues of the Laplacian on a compact manifold. Like the eigenvalues, they carry geometric data, but unlike the eigenvalues, they are associated to a non-selfadjoint problem and studied by analytic continuation of natural spectral functions. We'll focus here on scattering theory for the Laplacian on manifolds with constant negative curvature "at infinity" which have chaotic classical dynamics and so serve as a model of chaotic scattering. We'll discuss analogues of Selberg's trace formula and the Duistermaat–Guillemin trace formula for compact manifolds, and their application to elucidating the geometric content of resonances.

Monday, 21 March 2011
Lecture at 4:00 pm
Coffee, tea, and refreshments from 3:30–5:00 pm
Room 617, Wachman Building
Department of Mathematics