

abstract

MEMBERS SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

This talk is intended for a general audience. We define and discuss a spectral invariant of closed Riemannian surfaces, namely the zeta regularized trace of inverse of the Laplacian. Physically this corresponds to the sum of squares of the wavelengths of the surface. This quantity is somewhat related to the determinant of the Laplacian. In addition it has a probabilistic interpretation and on an analytical level it corresponds to an analog of the ADM mass for closed surfaces. After exploring these connections, we discuss the behavior of this invariant on conformal classes, in particular it satisfies a negative mass theorem on surfaces of positive genus.