

DIFFERENTIAL GEOMETRY/PDE SEMINAR

WEDNESDAY, NOVEMBER 3, 2010

PADELFORD C-36

3:50PM–5PM

Spectral theory and dynamics of asymptotically hyperbolic
manifolds

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Asymptotically hyperbolic manifolds are complete Riemannian manifolds with infinite volume and include many interesting examples such as the Poincaré-Einstein manifolds which are studied in adS-CFT correspondence in string theory. We will begin with the geometry of these spaces followed by their spectral theory. I will then discuss recent results for the dynamics of their geodesic flow, dynamical zeta functions, and a “prime orbit theorem.” In conclusion, based on a trace formula relating the spectral theory and dynamics via a renormalized wave trace, together with a counting estimate from analytic number theory, I will discuss a result which gives a quantitative relationship between the spectrum and the dynamics. Physically, this result describes an interaction between the quantum and classical mechanics.

For more information about this seminar, visit the DG/PDE Seminar Web page (from the Math Department home page, www.math.washington.edu, follow the link **Seminars, Colloquia, and Conferences**).

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