

EIGENVALUE ESTIMATES ON ASYMPTOTICALLY HYPERBOLIC SPACES AND THEIR SUBMANIFOLDS

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In the class of conformally compact (CC) manifolds, Asymptotically Hyperbolic (AH) manifolds are those whose sectional curvatures approach -1 at infinity. The model case for an AH space is the Poincaré ball, whose "infinity"—known as the conformal infinity—is simply the sphere equipped with the standard conformal structure. A natural question in this area is the relationship between the geometry of the interior and the conformal geometry of the conformal infinity. I will prove, for instance, that for any AH space, the first p -Dirichlet eigenvalue is bounded above by the corresponding value in the model case. I will also discuss eigenvalue estimates (specifically, lower bounds) on submanifolds of certain AH spaces. If time permits, I will further discuss a spectral rigidity result for a class of submanifolds inside AH spaces. This is joint work with Aaron Tyrrell.