1056-53-1316   **Vincent Bonini*** (`vbonini@calpoly.edu`), Department of Mathematics, California Polytechnic State University, San Luis Obispo, CA 93407, **Jie Qing** (`qing@ucsc.edu`), Department of Mathematics, University of California, Santa Cruz, Santa Cruz, CA 95064, and **Jose Espinar** (`jespinar@ugr.es`), Departmento de Geometría y Topología, Universidad de Granada, E-18071 Granada, Spain. *Hypersurfaces in Hyperbolic Poincaré Manifolds and Conformally Invariant PDEs.*

Geometric foliations of manifolds often have physical significance and can help to characterize the underlying geometry and topology of their ambient space. In this talk we focus on a preliminary result for hyperbolic Poincaré manifolds, which serve as prototypical models for asymptotically hyperbolic manifolds. We derive a relationship between the eigenvalues of the Schouten tensor of a conformal representative of the conformal infinity of a hyperbolic Poincaré manifold and the principal curvatures on the level sets of its uniquely associated defining function. This relationship gives a correspondence between Weingarten hypersurfaces in hyperbolic Poincaré manifolds and conformally invariant equations on the conformal infinity and leads to some interesting geometric foliations. (Received September 21, 2009)

1