1071-53-258 **Vincent Bonini*** (vbonini@calpoly.edu), Department of Mathematics, California Polytechnic State University, San Luis Obispo, CA 93407, and **José Espinar** and **Jie Qing**. *On Proper Horospherically Convex Hypersurfaces in $\mathbb{H}^{n+1}$ and Complete Conformal Metrics on Domains of $\mathbb{S}^n$.*

In this talk we will discuss our continued investigations on the correspondence of the theory of hypersurfaces in hyperbolic space $\mathbb{H}^{n+1}$ and conformal metrics on the conformal infinity $\mathbb{S}^n$ of hyperbolic space $\mathbb{H}^{n+1}$. Based on the prior works of Espinar, Gálvez and Mira and Bonini, Espinar and Qing, we construct a correspondence between complete, canonically oriented, properly immersed horospherically convex hypersurfaces in $\mathbb{H}^{n+1}$ with injective hyperbolic Gauss map and subdomains of the sphere $\mathbb{S}^n$ endowed with a complete metric in the conformal class of the standard round metric g_0 on $\mathbb{S}^n$ with eigenvalues of its Schouten tensor less than $\frac{1}{2}$. This correspondence is then used in an attempt to provide a unified framework for understanding the correspondence between elliptic problems associated with Weingarten hypersurfaces in hyperbolic space $\mathbb{H}^{n+1}$ and conformally invariant elliptic equations on subdomains of the conformal infinity $\mathbb{S}^n$. (Received March 08, 2011)