

Nonnegatively Curved Hypersurfaces in Hyperbolic Space

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Abstract: The embedded and immersed hypersurfaces with various nonnegative curvature conditions in Euclidean space and hyperbolic space are classical objects that are studied in differential geometry. In this student centered talk, we will discuss the setting and some of the basic tools that can be used to study hypersurfaces immersed in hyperbolic space. In particular, we will discuss the geometry of horospheres in hyperbolic space and the global correspondence theorem, which we have used to extend classification theorems for nonnegatively curved embedded hypersurfaces in hyperbolic space to the immersed setting.

About the speaker: Vincent Bonini is an associate professor of mathematics at California Polytechnic State University, San Luis Obispo. He received his Ph.D. from the University of California, Santa Cruz, in 2006, working under professor Jie Qing. His graduate studies were primarily focused on asymptotically flat and asymptotically hyperbolic manifolds and their applications to mathematical relativity. More recently, his research has focused on conformal geometry and classical problems in differential geometry.