Mathematics, Statistics, and Computer Science **@ UIC**

Algebraic Geometry Seminar

Reduction of manifolds with semi-negative holomorphic sectional curvature

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Abstract: The interplay of various notions of hyperbolicity and the geometry and structure of a projective manifold is an important topic in complex geometry. In this spirit, we investigate a projective Kaehler manifold M of semi-negative holomorphic sectional curvature H. We will begin with an overview of the recent progress on this topic. We will then introduce a new differential geometric numerical rank invariant which measures the number of linearly independent truly flat directions of H in the tangent spaces. This invariant turns out to be bounded above by the nef dimension and bounded below by the numerical Kodaira dimension of M. We will also discuss a splitting theorem for M in terms of the nef dimension and, under some additional hypotheses, in terms of the new rank invariant. This is joint work with S. Lu, B. Wong and F. Zheng.

Wednesday, November 29 at 4:00 PM in SEO 427