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

Algebraic Geometry Seminar

Nonexistence of asymptotical GIT compactification

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Abstract: (Joint with Xiaowei Wang) In the preface of the second version of the book Geometric Invariant Theory, the authors asked that whether the approach of using asymptotic chow stability to construct moduli space of canonically polarized manifolds could yield a natural compactification. By comparing different stability notions and the related invariants, we show that there exists families of canonically polarized manifolds, e.g., hypersurfaces in $\mathbb{P}^3$, which don't have asymptotical Chow semistable limits. This implies that unlike Giesker and Mumford's result in the curve case, in higher dimension, the method fails.

Friday, November 14 at 1:00 PM in SEO 636