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

Algebraic Geometry Seminar

The normalized volume of a singularity is lower semi-continuous

Yuchen Liu (Yale)

Abstract: Motivated by work in differential geometry, Chi Li introduced the normalized volume of a klt singularity as the minimum normalized volume of all valuations centered at the singularity. This invariant carries some interesting geometric/topological information of the singularity. In this talk, we show that in a Q-Gorenstein flat family of klt singularities, normalized volumes are lower semicontinuous with respect to the Zariski topology. As an application, we show that K-semistability is a very generic or empty property in a Q-Fano family. If time permits, I will discuss related results in positive characteristic. This talk is partly based on joint work with Harold Blum.

Wednesday, October 24 at 4:00 PM in 427 SEO