

Algebraic Geometry Seminar

Stability on valuations of a singularity

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Abstract: In higher dimensional geometry, it has been known that from many perspectives a log terminal singularity is a local analogue of Fano varieties. Many statements of Fano varieties have a counterpart for log terminal singularities. One central topic on the geometry of a Fano variety is its stability which in particular reflects whether the Fano variety carries a canonical metric. In this talk, we will discuss a recent joint work with Chi Li (some part still in progress) in which we want to establish a local stability theory of a fixed log terminal singularity. Inspired by the study from differential geometry, (e.g. tangent cone, Sasakian-Einstein metric), for any log terminal singularity, we investigate the valuation which has the minimal normalized volume. Our goal is to prove various properties of this valuation which enable us to degenerate the singularity to a K-semistable T-singularity (with a torus action) in the Sasakian-Einstein sense.

Monday, January 23 at 4:00 PM in SEO 427
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