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

Algebraic Geometry Seminar

Singular varieties with trivial canonical bundle

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Abstract: If X is a smooth projective variety (or compact Kähler manifold) with trivial first Chern class, then a famous result of Beauville and Bogomolov asserts that up to a finite étale cover, X is a product of varieties of three possible type: abelians varieties (or tori), Calabi-Yau's or Hyperkähler. These last two classes are defined using properties of the algebra of global holomorphic forms.

If X is singular though (say with torsion canonical bundle and klt singularities) this result is not known and presumably very difficult. In this talk, we will explain that if in addition X is assumed to be strongly stable (which is an infinitesimal version of irreducibility) then X falls into one of the singular analogues of the two categories above Calabi-Yau's and Hyperkähler.

This is ongoing joint work with Stefan Kebekus and Daniel Greb.

Wednesday, September 14 at 4:00 PM in SEO 427