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Geometry and analysis of degenerating Calabi-Yau manifolds

Ruobing Zhang

Stony Brook University
E-mail: ruobing.zhang@stonybrook.edu

Abstract

This talk concerns a naturally occurring family of Calabi-Yau manifolds that degenerates in the sense of metric geometry, algebraic geometry and nonlinear PDE. A primary tool in analyzing their behavior is the recently developed regularity theory and multi-scale singularity analysis in the collapsed setting. We will give a precise description of arising singularities and explain possible generalizations.