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Joint Geometric Analysis Seminar

(Part of MIST program)

Higher regularity for singular Kahler-Einstein metrics

Dr. Shih-Kai Chiu
University of Oxford

Abstract

In this talk we consider singular Kähler-Einstein metrics that are obtained as Gromov-Hausdorff limits of polarized Kähler-Einstein manifolds. We first show that when the metric tangent cone at a point is isomorphic to the germ of the singularity, then the singular metric converges to its tangent cone at a polynomial rate on the level of Kähler potentials. When the tangent cone has a smooth cross section, this implies polynomial convergence in the usual sense, generalizing a result of Hein-Sun. We also obtain a similar result for a class of examples when the tangent cone is not isomorphic to the germ of the singularity. Finally, similar techniques allow us to prove a rigidity result for complete $\partial\bar{\partial}$bar-exact Calabi-Yau metrics with maximal volume growth. This talk is based on joint work with Gábor Székelyhidi.

Date: October 28, 2022 (Friday)
Time: 3:00pm – 4:00pm (Hong Kong time)
ZOOM link: https://cuhk.zoom.us/j/91805734715

All are Welcome