

BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

HOLONOMY OF LIMITS OF EINSTEIN 4-MANIFOLDS

Tristan Ozuch
MIT

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Tea: 3:45pm in Room 365

Abstract: Recent developments have led to a complete reconstruction of the moduli space of Einstein 4-metrics in a Gromov-Hausdorff (GH) neighborhood of any noncollapsed singular metric. This arbitrarily precise reconstruction has provided indications that being Kähler may be a necessary condition for an Einstein singular space to be a limit of smooth Einstein 4-manifolds.

However, with Claude Lebrun, we show that this condition is not sufficient when the scalar curvature is positive. Specifically, our work demonstrates that if a real Einstein 4-metric is close to a Kähler Einstein orbifold with positive scalar curvature, it must be conformally Kähler, which rules out many desingularizations. To prove this, we combine the above reconstruction and a flexible criterion developed by Wu and improved by Lebrun to detect Kähler-Einstein metrics among Einstein metrics.

See <http://math.bu.edu/research/geom/seminar.html> or contact Yu-Shen Lin (yslin@bu.edu) or Brian Williams (bwill22@bu.edu) for more information.