

*Department of Mathematics,
University of California San Diego*

Seminar on Cheeger-Colding theory, Ricci flow, Einstein metrics, and Related Topics

Dr. Eric Chen

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Ricci flow and integral pinching results, Part 1

Abstract:

Curvature pinching theorems restrict the topology of smooth manifolds satisfying suitable curvature assumptions. In some situations the Ricci flow can transform initial integral curvature bounds into later pointwise bounds and thereby extend pointwise to integral pinching results. I will first review L^p integral pinching theorems of Gursky, Hebey–Vaugon, Dai–Wei–Ye, and others, which all rely on supercritical powers p greater than $n/2$ or on Chern–Gauss–Bonnet in dimension four. Then I will discuss how stronger control of the Sobolev inequality obtained using Perelman’s μ -functional can be used to address the critical case $p = n/2$, leading both to a generalization of previous results as well as to a separate pinching result in the asymptotically flat setting. Some of the work presented is joint with Guofang Wei and Rugang Ye.

Host: Bennett Chow

Tuesday, December 1, 2020

5:00 PM

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