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

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Ricci flow in higher dimensions, part 1

Abstract:

We present a new compactness theory of Ricci flows. This theory states that any sequence of Ricci flows that is pointed in an appropriate sense, subsequentially converges to a synthetic flow. Under a natural non-collapsing condition, this limiting flow is smooth on the complement of a singular set of parabolic codimension at least 4. We furthermore obtain a stratification of the singular set with optimal dimensional bounds depending on the symmetries of the tangent flows. Our methods also imply the corresponding quantitative stratification result and the expected $L^p$-curvature bounds.

As an application we obtain a description of the singularity formation at the first singular time and a long-time characterization of immortal flows, which generalizes the thick-thin decomposition in dimension 3. We also obtain a backwards pseudolocality theorem and discuss several other applications.

The schedule of the lecture series will be approximately as follows:
2. Continuation of Lecture 1 + Synthetic definition of Ricci flows (metric flows) and basic properties
3. Convergence and compactness theory of metric flows
4. Partial regularity of limits of Ricci flows

Special Note:
For the seminar series information and schedule, see: http://www.math.ucsd.edu/~benchow/cc-seminar.html

Host: Bennett Chow

Monday, October 5, 2020
7:00 PM
For Zoom ID and password, email bechow@ucsd.edu