MASSACHUSETTS INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MATHEMATICS

Geometric Analysis Seminar

Wednesday, November 10, 2021

4:00pm – 5:00pm   Room 2-131

Qin Deng
(MIT)

"Hölder continuity of tangent cones in RCD(K,N) spaces and applications to non-branching"

Abstract

It is known by a result of Colding-Naber that for any two points in a Ricci limit space, there exists a minimizing geodesic where the geometry of small balls centred along the interior of the geodesic change in at most a Hölder continuous manner. This was shown using an extrinsic argument and had several key applications for the structure theory of Ricci limits. In this talk, I will discuss how to overcome the use of smooth structure in the Colding-Naber argument in order to generalize this result to the setting of metric measure spaces satisfying the synthetic lower Ricci curvature bound condition RCD(K,N). As an application, I will show that all RCD(K,N) spaces are non-branching, a result which was previously unknown for Ricci limit spaces.