
ROBERT MCCANN, University of Toronto

Inscribed radius bounds for lower Ricci bounded metric measure spaces with mean convex boundary

Consider an essentially nonbranching metric measure space with the measure contraction property of Ohta and Sturm. We prove a sharp upper bound on the inscribed radius of any subset whose boundary has a suitably signed lower bound on its generalized mean curvature. This provides a nonsmooth analog of results dating back to Kasue (1983) and subsequent authors. We prove a stability statement concerning such bounds and — in the Riemannian curvature-dimension (RCD) setting — characterize the cases of equality. This represents joint work with Annegret Burtscher, Christian Ketterer and Eric Woolgar.