SMOOTH AND NON-SMOOTH ASPECTS OF RICCI CURVATURE LOWER BOUNDS

ANDREA MONDINO

After recalling the basic notions coming from differential geometry, the talk will be focused on spaces satisfying Ricci curvature lower bounds. The idea of compactifying the space of Riemannian manifolds satisfying Ricci curvature lower bounds goes back to Gromov in the 80s and was pushed by Cheeger and Colding in the 90s who investigated the fine structure of possibly non-smooth limit spaces. A completely new approach via optimal transportation was proposed by Sturm and Lott-Villani around fifteen years ago. Via such an approach one can give a precise definition of what means for a non-smooth space to have Ricci curvature bounded below. Such an approach has been refined in the last years giving new insights to the theory and yielding applications which seems to be new even for smooth Riemannian manifolds.

The talk is meant to be an introduction to the topic, accessible to non-specialists and as self-contained as possible.

University of Oxford
E-mail address: andrea.mondino@maths.ox.ac.uk
URL: https://www.maths.ox.ac.uk/people/andrea.mondino