LEZIONE LAGRANGIANA
Prof. Andrea Mondino

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Smooth and non-smooth aspects of Ricci curvature lower bounds

30 Novembre 2023 alle 14.30-15.30
Aula De Filippi, Via Accademia Albertina 13, presso DBIOS, Torino

ABSTRACT: 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 twenty 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.

SHORT BIO:
Prof. Mondino obtained his PhD in maths in SISSA in 2011 and has had since then various prestigious academic positions in SNS Pisa, Zurich, Berkeley and Warwick. He is currently full professor at the University of Oxford since 2022.
He is the recipient of many awards and grants, including the Whitehead Prize 2020, ERC Starting Grant 2018, Bartolozzi Prize 2017, Huneke Fellow at MSRI-Berkeley 2016, Gioacchino Iapichino Prize 2014, ETH Fellow 2013-15. He is co-Editor-in-Chief for the journal 'Calculus of Variations and Partial Differential Equations, and sits on the editorial board of several other journals.
Prof. Mondino works at the interface between Analysis and Geometry. More precisely he studies problems arising from (differential and metric) geometry by using analytic techniques.

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