
OPTIMAL TRANSPORT AND QUANTITATIVE GEOMETRIC INEQUALITIES

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The goal of the talk is to discuss a quantitative version of the Levy–Gromov isoperimetric inequality (joint with Cavalletti and Maggi) as well as a quantitative form of Obata’s rigidity theorem (joint with Cavalletti and Semola). Given a closed Riemannian manifold with strictly positive Ricci tensor, one estimates the measure of the symmetric difference of a set with a metric ball with the deficit in the Levy–Gromov inequality. The results are obtained via a quantitative analysis based on the localisation method via L^1 -optimal transport. For simplicity of presentation, the talk will present the results in case of smooth Riemannian manifolds with Ricci Curvature bounded below; moreover it will not require previous knowledge of optimal transport theory.