Mathematics and CS Seminar

Leaves decompositions in Euclidean spaces

Krzysztof Ciosmak
University of Oxford

Host: Jan Maas

For a given 1-Lipschitz map $u\colon\mathbb{R}^n\to\mathbb{R}^m$ we define a partition, up to a set of Lebesgue measure zero, of $\mathbb{R}^n$ into maximal closed convex sets such that restriction of u is an isometry on this sets. Suppose we are given a probability measure μ such that weighted Riemannian manifold $(\mathbb{R}^n, \mu, d)$ satisfied the curvature-dimension condition $CD(\kappa, N)$. We consider a disintegration $(\mu_{\mathcal{S}})$ of μ with respect to the partition. We prove that for almost every set $\mathcal{S}$ of the partition of dimension m the manifold $(\mathrm{int}\mathcal{S} \mu_{\mathcal{S}},d)$ satisfies the $CD(\kappa,N)$ condition. This provides a partial affirmative answer to a conjecture of Klartag. We provide a counterexample to another conjecture of Klartag that, given a vector measure on $\mathbb{R}^n$ with total mass zero, the conditional measures, with respect to partition obtained from certain 1-Lipschitz map, also have total mass zero.

Thursday, February 6, 2020 04:00pm - 06:00pm
Heinzel Seminar Room / Office Bldg West (I21.EG.101)

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