

Some variational problems and unequal dimensional Optimal Transport

Introduce

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Interviene

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Abstract

This talk is devoted to variational problems on the set of probability measures which involve optimal transport between unequal dimensional spaces. In particular, we study the minimization of a functional consisting of the sum of a term reflecting the cost of (unequal dimensional) optimal transport between one fixed and one free marginal, and another functional of the free marginal (of various forms). Motivating applications include Cournot-Nash equilibria where the strategy space is lower dimensional than the space of agent types. For a variety of different forms of the term described above, we show that a nestedness condition, which is known to yield much improved tractability of the optimal transport problem, holds for any minimizer. Depending on the exact form of the functional, we exploit this to find Monge-Ampère type equations characterising solutions, prove convergence of an iterative scheme to compute the solution, and prove regularity results. Moreover, if time permits, we will introduce a class of metrics (and the associated geodesics) on the space of probability measures such that the set of measures for which nestedness holds is (almost) convex with respect to our interpolation.

This talk is based on joint works with Brendan Pass.

Seminario

Mercoledì 30 ottobre 2019

Aula 8, ore 15.30

Via dei Musei 41 - Brescia

