

Stability in optimal transport and strong c -concavity

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The stability of optimal transport maps under variation of the measures is fundamental from a mathematical viewpoint and is for instance closely related to the convergence of numerical approaches to solve optimal transport problems.

In this talk, I will first introduce the notion of strong c -concavity and show that it plays an important role for proving stability results in optimal transport for general cost functions c . I will then introduce a differential criterion for proving that a function is strongly c -concave, under the assumption that the cost c satisfies the classical Ma-Trudinger-Wang condition that appears in the regularity theory of optimal transport. I will finally show applications to the reflector problem and the Gaussian curvature measure prescription problem. This a joint work with Anatole Gallouet and Quentin Mérigot.

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