

On Entropy-Transport problems and distances between positive measures

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In this talk, we discuss a general class of variational problems involving entropy-transport minimization with respect to a couple of given finite measures with possibly different total mass. Problems of this kind are a natural generalization of classical optimal transportation problems.

For a certain choices of the entropy/cost functionals they provide a family of distances between measures, that lie between the Hellinger and the Kantorovich-Wasserstein ones and have interesting geometric properties. The connection to the original entropy/transport problem relies on convex duality in a surprising way. A suitable dynamic Benamou-Brenier characterization also shows the link of these distances to dynamic processes of gradient-flow type, which exhibit creation and annihilation of masses, e.g. in tumor growth models.

(Joint work with Alexander Mielke and Giuseppe Savaré.)

REFERENCES

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- [2] M. Liero, A. Mielke, and G. Savaré, Optimal Entropy-Transport problems and a new Hellinger-Kantorovich distance between positive measures, *arXiv preprint* 1508.07941, <http://arxiv.org/abs/1508.07941>