

Finite difference discretization of the quadratic Monge Kantorovich problem using minimal convex extensions of Brenier solutions

Vincent Duval*

vincent.duval@inria.fr

In this talk, we propose an algorithm to solve the Monge Ampère equation with second boundary value condition. Our method relies on the Lattice Basis Reduction technique introduced by Benamou, Collino and Mirebeau. Considering a specific extension of solutions to the Monge-Ampère problem, we show that it can be computed by solving an “oblique” equation outside the support of the source density, whereas the MA-LBR scheme is used on this support. The resulting non-linear discretized system is solved using a quasi-Newton method.

This is joint work with Jean-David Benamou.