

KEVIN GUITTET
Inria Rocquencourt

An Hilbertian framework for the time-continuous Monge-Kantorovich problem

Recently, J-D. Benamou and Y. Brenier introduced a computational fluid dynamic reformulation to solve the classical Monge- Kantorovich problem. Though the described augmented Lagrangian method involves an Hilbertian framework, the discussion was purely formal. Taking advantage of theoretical results in the field of optimal transport, and despite the lack of coercivity of the Hilbertian problem, we establish an existence result. Then under a reasonable assumption of positivity for the density, we prove the existence of saddle-points for both Lagrangian defined in, and finally prove a convergence result for the numerical method.