



FLorence OPTimization talkS

Organized by

(NODA) Numerical Optimization and Data Analysis group (DIEF)
(GOL) Global Optimization Laboratory (DINFO)
University of Florence

June 30th 2026

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Georgia Tech (USA)

Time&Location: 12:00 p.m. – Room 012 – CDD Morgagni

Title: *Optimal trajectories for optimal transport*

Abstract: We present solution of a discrete optimal transport problem in a nonuniform environment. To solve the optimal transport problem, we build the cost matrix and then use classical solvers for discrete optimal transport. The main challenge is to form the cost matrix, which requires finding the optimal trajectory between two points, and for this task we formulate and solve the associated Euler-Lagrange equation. We provide verifiable sufficient conditions of optimality of the solution and validate numerically the computation of the cost matrix. We illustrate our results and performance of the algorithms on several numerical examples in 2 and 3 space dimensions, and also give extension of the results to the non-autonomous setting.

Joint work with Daniyar Omarov, University of Alberta-PIMS (Canada).