Entropic Optimal Transport

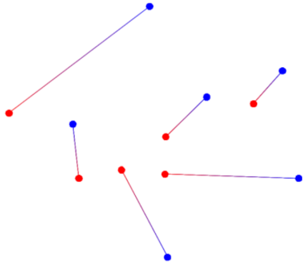
Luca Nenna

(LMO) Université Paris-Saclay

Lecture 2, OT

The "bridge" between quadratic Monge-Kantorovich and Schrödinger

From deterministic to stochastic matching



$$\varepsilon = 0$$

Figure: G. Peyre's twitter account

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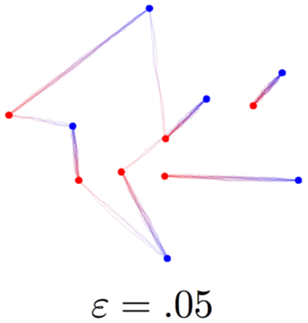

Figure: G. Peyre's twitter account

The "bridge" between quadratic Monge-Kantorovich and Schrödinger

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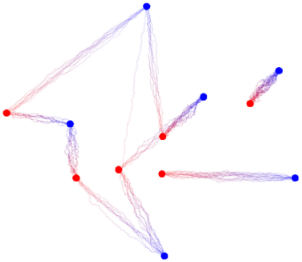

$$\varepsilon = 0.2$$

Figure: G. Peyre's twitter account

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From deterministic to stochastic matching

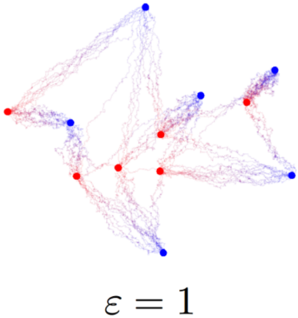

Figure: G. Peyre's twitter account

How the regularization works: from spread to deterministic plan (quadratic cost)

Take the quadratic cost and solve the regularized problem. Then as $\epsilon \to 0$ ($N = 512$), we have

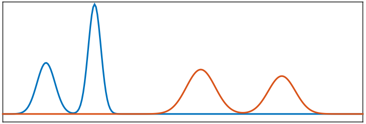

Figure: Marginals μ and ν

Figure: $\epsilon = 60/N$

How the regularization works: from spread to deterministic plan (quadratic cost)

Take the quadratic cost and solve the regularized problem. Then as $\epsilon \to 0$ ($N = 512$), we have

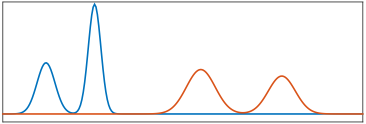

Figure: Marginals μ and ν

Figure: $\epsilon = 40/N$

How the regularization works: from spread to deterministic plan (quadratic cost)

Take the quadratic cost and solve the regularized problem. Then as $\epsilon \to 0$ ($N = 512$), we have

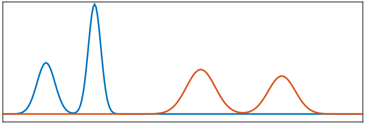

Figure: Marginals μ and ν

Figure: $\epsilon = 20/N$

How the regularization works: from spread to deterministic plan (quadratic cost)

Take the quadratic cost and solve the regularized problem. Then as $\epsilon \to 0$ ($N = 512$), we have

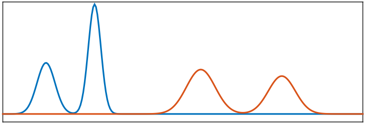

Figure: Marginals μ and ν

Figure: $\epsilon = 10/N$

How the regularization works: from spread to deterministic plan (quadratic cost)

Take the quadratic cost and solve the regularized problem. Then as $\epsilon \to 0$ ($N = 512$), we have

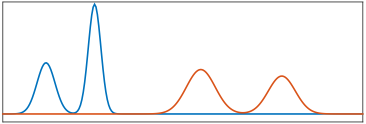

Figure: Marginals μ and ν

Figure: $\epsilon = 6/N$

How the regularization works: from spread to deterministic plan (quadratic cost)

Take the quadratic cost and solve the regularized problem. Then as $\epsilon \to 0$ ($N = 512$), we have

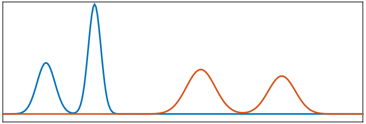

Figure: Marginals μ and ν

Figure: $\epsilon = 4/N$