

### **6th talk : Monge-Kantorovich problem for n-dimensional measures with fixed k-dimensional marginals**

*vendredi 5 juillet 2019 09:30 (50 minutes)*

The classical Monge-Kantorovich (transportation) problem deals with measures on a product of two spaces with two independent fixed marginals. Its natural generalization (multimarginal Monge-Kantorovich problem) deals with the products of  $n$  spaces  $X_1, \dots, X_n$  with  $n$  independent marginals. We study the Monge-Kantorovich problem on  $X_1 \times X_2 \times \dots \times X_n$  with fixed projections onto the products of  $X_{i_1}, \dots, X_{i_k}$  for all  $k$ -tuples of indices ( $k < n$ ). On the language of descriptive geometry this can be called “ $k$ -dimensional Monge’s protocols for  $n$ -dimensional bodies”. There are both similarities and differences from the classical problem concerning feasibility, uniqueness, smoothness, duality theorem, existence of the dual solution.

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