

SCMS Seminar



CONTINUITY OF THE OPTIMAL TRANSPORT IN 2D MONGE PROBLEM

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Lecture

Time: 2:00-3:00 pm., Thursday, January 4, 2018

Venue: Room 2201, East Main Guanghai Tower, Handan Campus

Abstract: The optimal transportation problem was introduced by Monge in 1781. Since then the problem has been extensively studied and more general costs are allowed. But for Monge's original cost $|x-y|$, very little is known about the regularity of the optimal mapping. In this talk, we show that, in two dimensional case, the optimal mapping is continuous. By a counter-example we show that the mapping fails to be Lipschitz in general. This is a joint work with F. Santambrogio and X.-J. Wang.

$$b_i - \frac{\left(\sum_{j=1}^{i-1} a_{ij} x_j^{(k)} + \sum_{j=i+1}^n a_{ij} x_j^{(k)}\right)}{a_{ii}}$$
$$\Delta y_i = \int_{x_i}^{x_{i+1}} \frac{a_{ij} b_i - \left(\sum_{j=1}^{i-1} a_{ij} x_j^{(k)} + \sum_{j=i+1}^n a_{ij} x_j^{(k)}\right)}{a_{ii}} dx$$
$$\int_{x_k}^{x_{k+1}} f(x, y) dx = \int_{x_k}^{x_{k+1}} y' dx = y(x)$$
$$-\sqrt{(y_n + 0.5\tau k_1)^2 + (t_n + 0.5\tau)^2}$$