SEMINÁRIO DO GRUPO DE FÍSICA MATEMÁTICA

Dia 19 de outubro (quinta-feira), às 11h00, sala 6.2.33

Applied optimal transport for PDEs (Part 2)

Léonard Monsaigeon

(Grupo de Física Matemática – Universidade de Lisboa)

Abstract: In this series of 3 talks I will discuss several applications of optimal transport to PDEs. I will first discuss the basic theory of optimal transport, including a heuristic differential formalism allowing to view the space of probability measures as a weak Riemannian manifold. Then I will talk about several applications, including: (i) constructive existence proofs for parabolic PDEs based on suitable time-discretization (the Jordan-Kinderlehrer-Otto scheme, or DeGiorgi's minimizing movement) yielding conservative numerical schemes, and (ii) McCann's displacement convexity and corresponding long-time convergence results for dissipative systems. This series of talks is intended to be completely self-contained.

If time permits I will also discuss a recent extension to unbalanced optimal transport (i-e with mass variations on the space of arbitrary measures), which I recently introduced simultaneously with 2 other teams.

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