

DIFFERENTIAL GEOMETRY/PDE SEMINAR

WEDNESDAY, APRIL 13, 2011

PADELFORD C-36

3:50PM–5PM

A new transportation distance between non-negative measures

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Given a bounded domain Ω , it is by now well-known that the gradient flow of the entropy functional $\int_{\Omega}[\rho \log(\rho) - \rho]dx$, w.r.t. the Wasserstein distance, produces a solution to the heat equation with Neumann boundary conditions. Recently, in collaboration with Nicola Gigli we introduced a new transportation distance between non-negative measures inside a domain Ω . This distance enjoys many nice properties: for instance, it makes the space of non-negative measures inside Ω a geodesic space without any convexity assumption on the domain. Moreover, the gradient flow of the entropy functional $\int_{\Omega}[\rho \log(\rho) - \rho]$ w.r.t. this distance coincides with the heat equation subject to the Dirichlet boundary condition equal to 1. In this talk I will first review the classical theory, and then I'll introduce this new distance and show its main properties.

For more information about this seminar, visit the DG/PDE Seminar Web page (from the Math Department home page, www.math.washington.edu, follow the link **Seminars, Colloquia, and Conferences**).

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