

**General Mathematics Seminar
of the
University of Luxembourg**

**In cooperation with the
Luxembourg Mathematical Society**

August 2012

Thursday, August 2, 2012 at 14:00

Campus Kirchberg, room A02

Marc Arnaudon
(Université de Poitiers)

Generalized Navier-Stokes flows

We introduce a notion of generalized Navier-Stokes flows on manifolds, that extends to the viscous case the one defined by Brenier. Their kinetic energy extends the kinetic energy for classical Brownian flows, defined as the L^2 norm of their drift. We prove that there exists a generalized flow which realizes the infimum of kinetic energies among all generalized flows with prescribed initial and final configuration. Finally we construct generalized flows with prescribed drift and kinetic energy smaller than the L^2 norm of the drift.

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August 2012

Thursday, August 2, 2012 at 15:15

Campus Kirchberg, room A02

Jinghai Shao
(Beijing Normal University)

Harnack inequalities for SDE and SFDE with Non-Lipschitz coefficients or singular drifts

We first deal with establishing the dimension-free Harnack inequalities for SDEs and SFDEs with non-Lipschitz coefficients. Then we establish the dimension-free Harnack inequalities for SDEs with singular drifts in the form of Krylov and Roeckner [PTRF 2005]. These inequalities are applied to provide some estimates of heat kernels.