

Berlin Leipzig Seminar

Analysis/probability theory

First Meeting Summer Term 2006

Organized by the DFG Research Group *Analysis and Stochastics in Complex Physical Systems*

DATE:

Friday, 21 April 2006

VENUE:

Technical University Berlin, Institute for Mathematics, Str. des 17. Juni 136, 10623 Berlin
Room MA415

PROGRAMME:

10:15–11:15: **Max von Renesse (Technical University Berlin)**

Stochastic heat equation in Wasserstein space as generalized Fleming-Viot process

Abstract: A stochastic perturbation of the heat equation should respect mass conservation and positivity of the solution. We introduce a model where the noise is adapted to the Wasserstein metric. A constructive existence result is obtained as a limit of a generalized Moran particle process where the jump rates are state dependent.

11:25–12:25: **Michiel van den Berg (Bristol University)**

Heat flow, Brownian motion and Hardy inequality for complete Riemannian manifolds

Abstract: Bounds are obtained for the heat content of an open set in a complete Riemannian manifold, provided the Dirichlet Laplace Beltrami operator satisfies a strong Hardy inequality. Brownian motion tools are used to obtain asymptotic results in various examples.

13:30–14:30: **Anton Bovier (Weierstraß Institute Berlin)**

Spectral approaches to ageing

Abstract: We investigate spectral characteristics of Markov chains that exhibit ageing. We consider two rather systems with rather different properties, Bouchaud's trap model and Sinai's random walk, and show how in both cases it is possible to obtain enough information on eigenvalues and eigenfunctions to deduce in an easy way all relevant dynamical properties.

Everybody is welcome to attend.

Wolfgang König, University of Leipzig