Faculdade de Ciências da Universidade de Lisboa

SEMINÁRIO DO GRUPO DE FÍSICA MATEMÁTICA

Dia 14 de Junho (quarta-feira), às 11h00, sala 6.2.33

On the long-time behaviour of a semilinear stochastic partial differential equation

Marco Dozzi

(Inst. Elie Cartan - Univ. de Lorraine - Nancy)

Abstract: We consider stochastic equations of the prototype

$$du(t,x) = \left(\Delta u(t,x) + \gamma u(t,x) + u(t,x)^{1+\beta}\right)dt + \kappa u(t,x)dB_t$$

on a smooth domain $D \subset \mathbb{R}^d$ with Dirichlet boundary condition and non-negative initial condition, where $\beta > 0, \gamma$ and κ are constants and $(B_t, t \geq 0)$ is a real-valued brownian motion or fractional brownian motion with Hurst parameter $H > \frac{1}{2}$. By means of an associated random partial differential equation we estimate the blowup time of the solution u. In the case of brownian motion we estimate the probability for the existence of a non-trivial positive global solution. This is joint work with J.-A. Lopez-Mimbela and E. Kolkovska at CIMAT (Guanajuato, Mexico).

Local: FCUL – Edf. C6 - Piso 2, 6.2.33