

SEMINARI DE PROBABILITATS
PROBABILITY SEMINAR
Universitat de Barcelona–Universitat Autònoma
de Barcelona

Facultat de Matemàtiques, Universitat de Barcelona
Gran Via de les Corts Catalanes, 585; E-08007 Barcelona
Aula/Room IMUB-Facultat de Matemàtiques, 2nd floor
4 p.m.

Titles and abstracts for the academic year 2007-2008

06/02/2008 Jorge León, CINVESTAV, México

Fórmula de Itô para la solución de la ecuación del calor fraccionaria.

Abstract En esta charla utilizaremos las técnicas del cálculo de Malliavin para definir una integral estocástica con respecto a la solución de la ecuación del calor gobernada por un movimiento browniano fraccionario. Finalmente, analizaremos una fórmula de Itô para dicha solución.

13/02/2008 Sebastián del Baño, CRM, Bellaterra, Spain

Diffusion associated to a stochastic process with applications to the pricing of financial derivatives

Abstract We present a method that associates a diffusion to a given continuous martingale such that the marginals are preserved. This natural construction, which does not seem to be known in the Stochastic Analysis field, is inspired in a methodology used in the pricing of financial derivatives. We will describe it and explain its pitfalls which led to massive losses in many equity derivatives trading desks a few years ago.

20/02/2008 Frederic Utzet, Universitat Autònoma de Barcelona, Bellaterra, Spain

Multiple Stratonovich integral and Hu-Meyer formula for Lévy processes

Abstract In this talk, a multiple stochastic integral of Stratonovich type with respect to a Lévy process will be presented, and its relationship with the multiple Itô integral will be shown through a Hu-Meyer formula. The work is based on the clever intuition of Paul-André Meyer and on the combinatorics machinery introduced by Gian-Carlo Rota for vector measures.

27/02/2008 Carlo Marinelli, CRM, Bellaterra, Spain

Well-posedness in the mild sense for a class of stochastic PDEs with Poisson noise

Abstract We prove existence, uniqueness and Lipschitz dependence on the initial datum for mild solutions of stochastic partial differential equations with Lipschitz coefficients driven by Wiener and Poisson noise. Under additional assumptions, we prove Gâteaux and Fréchet differentiability of the solution with respect to the initial condition. As an application, we obtain gradient estimates for the resolvent associated to the mild solution. Finally, we prove the strong Feller property of the associated semigroup. If time permits, we shall discuss some extensions to equations with dissipative drift and applications to models of neurophysiology.