Institut für Stochastik der HUB | Arbeitsgruppe Wahrscheinlichkeitstheorie der U Potsdam

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INTERNATIONAL RESEARCH TRAINING GROUP

Stochastic Models of Complex Processes

Wednesday, November 10, 2010 – 17:15

Speaker

Hilmar Mai (Humboldt-Universität zu Berlin)

Title

Efficient parameter estimation for SDEs with jumps

Abstract: In this talk we discuss the parameter estimation problem for the coefficient of a Lévy-driven Ornstein-Uhlenbeck (OU) equation. We start with a maximum likelihood approach based on continuous observations. The maximum likelihood estimator can be derived in explicit form in this setting and is a functional of the continuous martingale part of the process. This leads to the problem of recovering the continuous part of the OU process when only discrete observations are given. We use a truncation method to distinguish between increments that most likely contain jumps and increments that result only from the continuous part of the process. Finally, we prove asymptotic normality of the estimator and show that it is efficient in the sense of the Hájek-Le Cam convolution theorem.

Location: MA 041, Straße des 17. Juni 136, TU Berlin

http://www2.math.tu-berlin.de/smcp/