Arbeitsgruppe Numerik

13. November 2013

Im Oberseminar

Numerik

wird am

Monstag, dem 25. November 2013

folgender Vortrag gehalten:

Frau Jun.-Prof.Kathrin Glau

TU München

Kolmogorov backward equations for option pricing in Lévy models

Zeit: 15:15 Uhr
Raum: P 812
Interessenten sind herzlich willkommen!

Abstract:
One major task mathematical finance sets itself is modeling, pricing and calibration of financial instruments. (Semi)martingale theory is used for modeling and derivative prices are written as conditional expectations. Typically, the latter are not available in closed form and, thus, computational methods become necessary. Essentially three approaches to compute the expectations are being used: Monte Carlo simulation, Fourier based valuation methods and the representation of prices as solutions of partial integro-differential equations (PIDEs). In this context we focus on Galerkin methods for solving PIDEs arising in Lévy models. We classify Lévy processes according to the solution spaces of the associated parabolic PIDEs and point out the role of the symbol. Furthermore, we derive Feynman-Kac representations of variational solutions. We discuss applications to option pricing and give an outlook on a Fininte Element solver based on the symbol.

gez. Prof. Stefan Volkwein