Zentrum Mathematik
Lehrstuhl für Finanzmathematik

Technische Universität München

Announcement WiSe 2016/2017
Lecture in Mathematical Finance

Computational Methods for Finance

Prof. Dr. Kathrin Glau

Area: / Modulnr.: Mathematical Finance / MA5710

Course Structure: Lecture: 2h Exercises: 1h Programming: 1h

Content: Fast, reliable and flexible computational methods for finance are introduced. First, we get familiar with the rich class of Levy models. For these models we then derive analytic characterizations of option prices and sensitivities/Greeks: The Fourier representation and the PDE representations. We discuss Fourier and PDE based approximations and convergence. Moreover, we implement the resulting schemes. We compare the techniques to Monte Carlo simulation.

Audience: MSc Mathematical Finance and Actuarial Science

Prerequisite: MA3702 (Continuous Time Finance)

Literature: **R. Seydel (2012):** Tools for Computational Finance. 5.Auflage, Springer, London.
P. Glasserman (2004): Monte Carlo Methods in Financial Engineering, Springer, New York.
Y. Achdou, O. Pironneau (2005): Computational methods for Option Pricing, SIAM, Philadelphia.

Certificate: Exam or oral Exam, 5 CP

Location: Parkring 11/ Garching-Hochbrück

Lecture/ Exercises: T.B.A.