Curriculum Vitae

Christian Bayer

Personal Information

- Date of birth: November 23, 1979
- Place of birth: Linz, Austria
- Address: Pintschstraße 3, 10249 Berlin, Germany.
- Nationality: Austria
- Marital status: single
- Telephone number (office): +49-30-314-24477
- Telephone number (private): +49-15703326811
- E-mail: bayer@math.tu-berlin.de
- Home page: http://www.math.kth.se/∼cbayer/

Research Interests

- Numerical methods for stochastic differential equations: cubature approach of T. Lyons and N. Victoir, adaptive Euler-Maruyama schemes for reflected diffusions.
- Simulated annealing in continuous time.
- Rough paths and geometry of iterated integrals of Brownian motion.
- Mathematical finance.
- Symplectic methods in molecular dynamics.

Publications and Preprints

- Christian Bayer, Josef Teichmann: *The proof of Tchakaloff's Theorem*, Proc. Amer. Math. Soc. 134 (2006) 3035–3040.
- Christian Bayer, Josef Teichmann: *Cubature on Wiener space in infinite dimension*, Proc. R. Soc. London, Ser. A, 464(2097), 2008.
- Christian Bayer, Josef Teichmann, Richard Warnung: *An implementation of hypo-elliptic simulated annealing*, working paper.
- Christian Bayer, Anders Szepessy, Raul Tempone: *Adaptive weak approximation of reflected diffusions*, to appear in MCMA.

- Christian Bayer, Klaus Wälde: *General Equilibrium Island-Matching and Saving in Continuous Time: Theory*, preprint.
- Christian Bayer, Klaus Wälde: *General Equilibrium Island-Matching and Saving in Continuous Time: Proofs*, preprint.

Academic career

- Since October 2009, Post-Doc at TU Berlin, Germany.
- October 2008 – September 2009, Post-Doc at the Institute of Mathematics, Royal Institute of Technology, Stockholm, Sweden.
- May 2008 – September 2008, Post-Doc ("wissenschaftlicher Mitarbeiter") at the Institute of Applied Mathematics, University of Bonn.

Teaching

- Winter term 2009, assistant for the lecture course "Finanzmathematik 1", TU Berlin.
- Summer term 2008, assistant for the lecture course "Algorithmische Mathematik II", University of Bonn.
- Summer term 2007, lecturer of the course "Einführung in Finanz- und Versicherungsmathematik", Vienna University of Technology.
- July 2006, short course on "Brownian motion and Ito calculus" at the WK summercamp in Weissensee, Austria.
- Summer 2002, co-author of official lecture notes for the lecture course "Versicherungsmathematik I".

Education

- March 2004 – April 2008 University of Technology, Vienna.
  - PhD under supervision of Dr. Josef Teichmann in stochastic analysis with focus on numerical methods completed in April 2008.

    Formal graduation "sub auspiciis praesidentis" on March 4, 2009.
  - Member of the graduate school "Differential Equation Models in Science and Engineering" supported by the Austrian Science Foundation (FWF) from July 1, 2004, until June 30, 2007. Employment in Josef Teichmann's START project "Geometry of stochastic differential equations" supported by the FWF since then.
  - Research visit in Stockholm (Prof. Anders Szepessy) from April to July 2005, work on adaptive algorithms for weak approximation of reflected diffusion SDEs.
  - Teaching of a course Introduction to financial and actuarial mathematics (for Lehramt Mathematik) in Summer term 2007.

- October 1999 – January 2004 University of Technology, Vienna.
  - Studies of “Technical Mathematics”, with specialization in actuarial and financial mathematics.
  - Graduated with distinction on January 22, 2004.
  - Diploma thesis under supervision of Dr. Josef Teichmann in Stochastic Analysis, topic: Cubature on Wiener Space Extended to Higher Order Operators.
- September 1990 - June 1998 Gymnasium BG/BRG Khevenhüllerstraße 1, Linz.
  - Matura (i. e. graduation) with distinction.

Military service

- October 1998 June 1999 in Amstetten and St. Pölten.

Skills

- Computer: comfortable with all common OS and their Office applications, profound experience with LaTeX, Maple, R, C/C++, Mathematica, Matlab
- Languages: German, English, French