

Monday, August 29

08:30 – 09:15 Registration

Lecture Hall A

Plenary Session

Chairperson: I. Dimov

09:15 – 09:30 Opening

09:30 – 10:20 **Pierre L'Ecuyer**

Approximate Zero-Variance Simulation in Rare Event Settings

10:20 – 11:10 **Thomas Müller-Gronbach**

Weak Approximation of Stochastic Differential Equations

11:10 – 11:30 Coffee break

Contributed Talks

Chairperson: Karl Sabelfeld

11:30 – 12:00 **Paula Whitlock**

Parallelization of Algorithms to Solve a Three-dimensional Sudoku Puzzle

12:00 – 12:30 **Christian Lécot**

Stratified Monte Carlo Integration

12:30 – 14:30 Lunch

13:30 – 14:30 Registration

Lecture Hall A

Special session “Stochastic Computation and Complexity of High Dimensional Problems”

Chairperson: Stefan Heinrich

14:30 – 15:00 **Henryk Woźniakowski**

The Randomized Setting for Linear Multivariate Problems Defined over L_2

15:00 – 15:30 **Steffen Dereich**

Estimation of Delta-gamma Sensitivities Based on the Bismut-Elworthy-Li Formula

15:30 – 16:00 **Mike Giles**

Numerical Analysis of Multilevel Milstein Scheme without Levy Areas

16:00 – 16:30 Coffee break

Chairperson: Thomas Müller-Gronbach

16:30 - 17:00 **Stefan Geiß**

Generalized Fractional Smoothness and L_p -variation of BSDEs with Non-Lipschitz Terminal Condition

17:00 - 17:30 **Lukasz Szpruch**

Strong Convergence and Stability of Numerical Methods for Non-Linear SDEs with Applications to MLMC Simulation of Financial Models

17:30 - 18:00 **Anni Toivola**

Approximating Stochastic Integrals in L_p

18:00 - 18:30 **Michael Gnewuch**

A Randomized Algorithm to Approximate the Star Discrepancy Based on Threshold Accepting

18:30 - 19:00 **Mario Ullrich**

Swendsen-Wang beats Heat-Bath

Tuesday, August 30

Lecture Hall A (Parallel Session)

Special session “Stochastic Computation and Complexity of High Dimensional Problems”

Chairperson: Michael Gnewuch

09:00 – 09:30 **Gunther Leobacher**

Fast Orthogonal Transforms and Generation of Brownian Paths

09:30 – 10:00 **Pawel Przybyłowicz**

Optimal Approximation of the Solutions of the Stochastic Differential Equations with Irregular Coefficients

10:00 – 10:30 **Peter Kritzer**

On the Step-by-step Construction of Polynomial Lattices for Numerical Integration in Weighted Sobolev Spaces

10:30 – 11:00 Coffee Break

Chairperson: Mike Giles

11:00 – 11:30 **Christel Geiß**

Approximation of Backward Stochastic Differential Equations Driven by Lévy Noise

11:30 – 12:00 **Thomas Daun**

Monte Carlo Algorithms for Parameter Dependent Integration Problems

12:00 – 12:30 **Sylvestre Burgos**

Numerical Analysis of Multilevel Monte Carlo Greeks

12:30 – 14:30 Lunch

Lecture Hall A

Special session “Stochastic Computation and Complexity of High Dimensional Problems”

Chairperson: Stefan Geiß

14:30 – 15:00 **Felix Heidenreich**

Multilevel Monte Carlo for Lévy driven SDEs

15:00 – 15:30 **Yuan Xia**

Numerical Analysis of Multilevel Jump-diffusion Simulation

15:30 – 16:00 **Nikolas Doebling**

Besov Regularity and Approximation of a Certain Class of Random Fields

16:00 – 16:30 Coffee Break

16:30 – 17:00 **Daniel Henkel**

Optimal Pointwise Approximation of Stochastic Heat Equations with Additive Noise

17:00 – 17:30 **Mikolaj Roj**

Multi-level Monte Carlo Simulations of Mean Exit Times

Contributed Talks

Chairperson: Wolfgang Ch. Schmid

17:30 – 18:00 **Krassimir Georgiev**

The PRACE Project and Using the High performance Computing for Large Monte Carlo Simulations

Tuesday, August 30

Lecture Hall B (Parallel Session)

Special session “Stochastic Metaheuristics for Optimization Problems”

Chairperson: Stefka Fidanova

- 09:00 – 09:30 **Carlos Cotta**
The Template Design Problem: A Perspective with Metaheuristics
- 09:30 – 10:00 **Maria Angelova**
Improvement of Multi-population Genetic Algorithms Convergence Time
- 10:00 – 10:30 **Olympia Roeva**
A Comparison of Simulated Annealing and Genetic Algorithm Approaches for Cultivation Model Identification
- 10:30 – 11:00 Coffee Break

Chairperson: Carlos Cotta

- 11:00 – 11:30 **Stefka Fidanova**
Wireless Sensor Network Layout
- 11:30 – 12:00 **Vassia Atanassova**
Generalized nets, ACO-algorithms and Genetic Algorithms
- 12:00 – 12:30 **Krassimir Atanassov**
On a Game-Method for Modelling with Intuitionistic Fuzzy Estimations: Part 2
- 12:30 – 14:30 Lunch

Lecture Hall B

Special session “Sequential Monte Carlo Methods for Large-scale Problems”

Chairperson: Lyudmila Mihaylova

- 14:30 – 15:00 **Avishy Carmi**
Sequential MCMC Particle Algorithms for Discrete-Time Nonlinear Filtering
- 15:00 – 15:30 **Nikolay Petrov**
Group Object Tracking with Sequential Monte Carlo Methods Based on a Parameterised Likelihood Function
- 15:30 – 16:00 **Dimitri Kanevsky**
Convexization in Markov Chain Monte Carlo
- 16:00 – 16:30 Coffee Break

Contributed Talks

Chairperson: Emanouil Atanassov

- 16:30 – 17:00 **Wolfgang Ch. Schmid**
Distribution Properties of Generalized van der Corput Sequences
- 17:00 – 17:30 **Florian Pausinger**
On the Asymptotics of a Lower Bound for the Diaphony of Generalized van der Corput Sequences in Arbitrary Base b
- 17:30 – 18:00 **Vitaliy Lukinov**
Monte Carlo Methods Based on Analytic Extension of the Resolvent of the Helmholtz Equation
- 18:00 – 18:30 **Mariya Korotchenko**
Value Simulation of the Interacting Pair Number for Solution of the Monodisperse Coagulation Equation

Wednesday, August 31

Lecture Hall A

Plenary Session

Chairperson: Pierre L'Ecuyer

- 09:00 – 09:50 **Karl Sabelfeld**
Stochastic Boundary Method of Fundamental Solutions and Application to Exciton Transport in Nanowires
- 09:50 – 10:40 **Stefan Heinrich**
Randomized Approximation and Solution of Elliptic PDEs
- 10:40 – 11:00 Coffee Break
- 11:30 – 12:30 Lunch
- 12:30 – 18:30 Excursion
- 19:30 Conference dinner

Thursday, September 1

Lecture Hall A (Parallel Session)

Special session “High-performance Computations for Monte Carlo Applications”

Chairperson: Aneta Karaivanova

- 09:00 – 09:30 **Michael Mascagni**
An Efficient Multithreaded Implementation of a Reproducible Parallel Random Number Generator Using OpenMP
- 09:30 – 10:00 **Paula Whitlock**
Employing Multiple GPU Devices over a Network to Investigate Multi-dimensional Mixtures of Hard Hyperspheres using MPI and CUDA
- 10:00 – 10:30 **Emanouil Atanassov**
Efficient Implementation of Heston Model using GPGPU
- 10:30 – 11:00 Coffee Break
- Chairperson: Emanouil Atanassov
- 11:00 – 11:30 **Abdujabar Rasulov**
Application Variance Reduction Techniques to Pricing Weather Derivatives
- 11:30 – 12:00 **Hongmei Chi**
Exploitation of Sensitivity Derivatives via Scrambled Kronecker Sequences
- 12:00 – 12:30 **Aneta Karaivanova**
Message Oriented Framework for Efficient Use of HPC Resources
- 12:30 – 14:30 Lunch

Lecture Hall A

Special session “High-performance Computations for Monte Carlo Applications”

Chairperson: Abdujabar Rasulov

- 14:30 – 15:00 **Hidemaro Suwa**
Geometric Allocation Approach for Transition Kernel of Markov Chain
- 15:00 – 15:30 **Hongmei Chi**
Simulation of Firefly Synchrony using Two Dimensional Cellular Automata
- 15:30 – 16:00 **Dusan Vudragovic**
Extensions of the SPEEDUP Path Integral Monte Carlo Code
- 16:00 – 16:30 Coffee Break

Lecture Hall A

Special session “Semiconductor Devices and Nanostructures”

Chairperson: Hans Kosina

- 16:30 – 17:00 **Asen Asenov**
Advanced Statistical Strategy for Generation of Non-Normally distributed PSP Compact Model Parameters and Statistical Circuit Simulation
- 17:00 – 17:30 **Hans Kosina**
Monte Carlo Simulation of Electron Transport in Quantum Cascade Lasers
- 17:30 – 18:00 **Lado Filipovic**
A Two-Dimensional Lorentzian Distribution for an Atomic Force Microscopy Simulator
- 18:00 – 18:30 **Xiaoyan Liu**
3D Parallel Full Band Ensemble Monte Carlo Devices Simulation for Nano Scale Devices Application
- 18:30 – 19:00 **Gang Du**
A Poisson-Schrödinger Equation Coupled Monte Carlo method to Investigate Spin Transports in SpinFET
- 19:00 – 19:30 **Philipp Schwaha**
Monte Carlo Investigations of Electron Decoherence due to Phonons

Thursday, September 1

Lecture Hall B (Parallel Session): Special session “Sensitivity Analysis”

Chairperson: Sergei Kucherenko

- 09:00 – 09:30 **Sergei Kucherenko**
Comparison of Latin Hypercube and Quasi Monte Carlo Sampling Techniques
- 09:30 – 10:00 **Miguel Munoz Zuniga**
Metamodelling with a Dependent Input Vector: Comparison of Two Approaches
- 10:00 – 10:30 **William Becker**
A Comparison of Two Sampling Methods for Global Sensitivity Analysis
- 10:30 – 11:00 Coffee Break

Chairperson: Sergei Kucherenko

- 11:00 – 11:30 **Dirk-Alexander Becker**
Application of Monte-Carlo-Based Sensitivity Analysis to Long-Term Performance Assessment Models for Final Repositories
- 11:30 – 12:00 **Tzvetan Ostromsky**
Sensitivity Analysis Study of a Large-scale Air Pollution Model - Computational Problems and High-performance Solutions
- 12:00 – 12:30 **Rayna Georgieva**
Sensitivity Analysis of Compact Models in Nanodevice Modeling
- 12:30 – 14:30 Lunch

Lecture Hall B

Contributed talks

Chairperson: Henryk Woźniakowski

- 14:30 – 15:00 **Aleksandr Burmistrov**
Monte Carlo Simulation of Vehicular Traffic Flow for Kinetic Model with Distance Oriented Interactions
- 15:00 – 15:30 **Eric Dumonteil**
Collision Densities and Mean Residence Times for d -dimensional Exponential Flights
- 15:30 – 16:00 **Ilya Medvedev**
The Efficiency Study of Splitting and Branching in Monte Carlo Method
- 16:00 – 16:30 Coffee Break

Lecture Hall B

Contributed talks

Chairperson: Alain Dubus

- 16:30 – 17:00 **Zdravko Botev**
Semi-parametric Importance Sampling for Rare-event Probability Estimation
- 17:00 – 17:30 **Tigran Nagapetyan**
Monte Carlo Simulations of Assymmetric Flow Field Flow Fraction
- 17:30 – 18:00 **Jordan Genoff**
Stochastic Sliding Windows for Sequential Data Mining

Friday, September 2

Lecture Hall B

Contributed talks

Chairperson: Asen Asenov

- 09:00 – 09:30 **Ivan Dimov**
A Monte Carlo Method Based on $JIII_r$ Sequences
- 09:30 – 10:00 **Nina Dobrinkova**
Game-Method Model and WRF-Fire Model Working Together
- 10:00 – 10:30 **Koen Poppe**
Normally Distributed Quasi-Random Samples Combining Box -Muller and Lattice Rules
- 10:30 – 11:00 Coffee Break

Contributed Talks

Chairperson: Stefka Fidanova

- 11:00 – 11:30 **Fabian Bastin**
Bias Evaluation and Reduction for Sample-path Optimization
- 11:00 – 11:30 **Andrea Zoia**
Collision Number Statistics for Transport Processes
- 11:30 – 12:30 Lunch