

Programme on
“Tractability of High Dimensional Problems and Discrepancy”

September 11 – October 13, 2017

organized by

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Workshop 2 - Tractability of high dimensional problems

October 9 – 13, 2017

• **Monday, October 9, 2017**

09:00 – 10:00 **Registration**

10:00 – 10:30 **Ian H. Sloan**

On the generation of random fields

10:30 – 11:00 *Coffee / Tea Break*

11:00 – 11:30 **Christel Geiss**

Random-walk approximation of (backward) SDEs: L_2 -rate

11:30 – 12:00 **Mario Hefter**

Random bit quadrature and approximation of distributions on Hilbert spaces

12:00 – 14:00 *Lunch Break*

14:00 – 14:30 **Hans Georg Feichtinger**

Wiener amalgam spaces and iterative methods for irregular sampling

14:30 – 15:00 **Mario Ullrich**

The inverse of the dispersion depends logarithmically on the dimension

15:00 – 15:30 *Break*

15:30 – 16:00 **Alexander Gilbert**

Applying QMC integration to a stochastic eigenproblem

16:00 – 16:30 **Marcin Wnuk**

Randomized Smolyak algorithms

• **Tuesday, October 10, 2017**

10:00 – 10:30 **Marguerite Zani**

Approximation complexity of random fields

10:30 – 11:00 *Coffee / Tea Break*

11:00 – 11:30 **Joscha Prochno**

Entropy numbers for embeddings of Schatten classes

11:30 – 12:00 **Paweł Siedlecki**

(s, t)-weak tractability of Euler and Wiener integrated processes

12:00 – 14:00 *Lunch Break*

14:00 – 14:30 **Sergei V. Pereverzyev**
On complexity reduction of learning tasks

14:30 – 15:00 **Martin Ehler**
Approximating functions on the Grassmannian from sampling values

15:00 – 15:30 *Break*

15:30 – 16:00 **Georg Pflug**
Scenario tree generation (probability quantification) for multistage stochastic programs

16:00 – 16:30 **David Krieg**
Optimal Monte Carlo Methods for L_2 -Approximation

● **Wednesday, October 11, 2017**

10:00 – 10:30 **Stephan Dahlke**
Besov regularity for linear and nonlinear parabolic PDEs

10:30 – 11:00 *Coffee / Tea Break*

11:00 – 11:30 **Erika Hausenblas**
Existence of a density on finite projections of the 2Dim stochastic Navier Stokes Equation driven by Levy processes or fractional Brownian motion

11:30 – 12:00 **Michaela Szölgényi**
Strong convergence of the Euler-Maruyama scheme for SDEs with discontinuous drift

12:00 – 12:30 **Andreas Neuenkirch**
An adaptive Euler scheme for SDEs with discontinuous drift coefficients

12:30 – 14:30 *Lunch Break*

14:30 – 16:30 **Informal Discussions**

● **Thursday, October 12, 2017**

10:00 – 10:30 **Leszek Plaskota**
Some results on tractability in the presence of noise

10:30 – 11:00 *Coffee / Tea Break*

11:00 – 11:30 **Sonja Cox**
Stochastic integration in quasi-Banach spaces: what Besov regularity does the stochastic heat equation possess?

11:30 – 12:00 **Arnulf Jentzen**
Stochastic approximation algorithms for second-order parabolic partial differential equations

12:00 – 14:00 *Lunch Break*

14:00 – 14:30 **Klaus Ritter**
Integration and L_2 -Approximation of tensor products of Korobov spaces of increasing smoothness

14:30 – 15:00 **Michael Gnewuch**
Randomized multivariate decomposition methods for infinite-dimensional integration

15:00 – 15:30 *Break*

15:30 – 16:00 **Stefan Geiss**
Approximating sequences of stochastic games for Perron solutions of the p -Laplace equation

16:00 – 16:30 **Paweł Przybyłowicz**
Recent developments in optimal global approximation of solutions of jump-diffusion SDEs

- **Friday, October 13, 2017**

10:00 – 10:30 **Peter Kritzer**

Randomized lattice rules with nearly optimal error convergence

10:30 – 11:00 *Coffee / Tea Break*

11:00 – 11:30 **Mario Neumüller**

Metrical star discrepancy bounds for lacunary subsequences of digital Kronecker sequences and polynomial tractability

11:30 – 12:00 **Robert Kunsch**

High-dimensional function approximation: Breaking the curse with Monte Carlo methods

12:00 – 12:30 **Henryk Woźniakowski**

QPT of LTP for Λ^{std}

All talks take place at ESI, Boltzmann Lecture Hall!