

Programme on
“Tractability of High Dimensional Problems and Discrepancy”

September 11 – October 13, 2017

organized by

Josef Dick (U New South Wales, Sydney), Peter Grabner (TU Graz), Aicke Hinrichs (U Linz),
Friedrich Pillichshammer (U Linz), Henryk Wóznickowski (Columbia U and U Warsaw)

Workshop 1 - Discrepancy theory and quasi-Monte Carlo methods

September 25 – 29, 2017

• Monday, September 25, 2017

09:00 – 10:00 **Registration**

10:00 – 10:30 **Vladimir Temlyakov**

Universal discretization

10:30 – 11:00 *Coffee / Tea Break*

11:00 – 11:30 **Benjamin Doerr**

A Sharp Discrepancy Bound for Jittered Sampling

11:30 – 14:00 *Lunch Break*

14:00 – 14:30 **Daniel Rudolf**

An Upper Bound of the Minimal Dispersion via Delta covers

14:30 – 15:00 **Takashi Goda**

Richardson extrapolation of polynomial lattice rules for smooth functions

15:00 – 15:30 *Break*

15:30 – 16:00 **Oliver Roche-Newton**

New bounds for the cardinality of the set $AA+A$

• Tuesday, September 26, 2017

10:00 – 10:30 **Mordechey Levin**

On L_p low discrepancy sequences

10:30 – 11:00 *Coffee / Tea Break*

11:00 – 11:30 **Ralph Kritzing**

Point sets and sequences with the optimal order of L_p -discrepancy

11:30 – 12:00 **Stefan Steinerberger**

One Gaussian to rule them all: pair correlation, irregularities of distribution and quadratures

12:00 – 14:00 *Lunch Break*

14:00 – 14:30 **Mike Giles**

QMC and thinning for empirical datasets

14:30 – 15:00 **Martin Ehler**

Quasi-Monte Carlo methods and importance sampling on the Grassmannian

15:00 – 15:30 *Break*

15:30 – 16:00 **Friedrich Pillichshammer**

Tractability properties of the weighted star discrepancy of regular grids

• **Wednesday, September 27, 2017**

10:00 – 10:30 **Dmitriy Bilyk**

On some problems of uniform distribution and energy minimization on the sphere

10:30 – 11:00 *Coffee / Tea Break*

11:00 – 11:30 **Ryan Matzke**

Stolarsky principle and the geodesic distance energy on the sphere

11:30 – 12:00 **Johann Brauchart**

Hyperuniformity on the sphere: deterministic constructions

12:00 – 14:00 *Lunch Break*

14:00 – 16:00 **Informal Discussions**

• **Thursday, September 28, 2017**

10:00 – 10:30 **Maxim Skriganov**

Point distributions in two-point homogeneous spaces

10:30 – 11:00 *Coffee / Tea Break*

11:00 – 11:30 **Bence Borda**

The discrepancy of random walks

11:30 – 12:00 **Markus Passenbrunner**

A spline version of the Martingale Convergence Theorem

12:00 – 14:00 *Lunch Break*

14:00 – 14:30 **Arne Winterhof**

Measures of Pseudorandomness: A partial hierarchy

14:30 – 15:00 **Radhakrishnan Nair**

Unique Ergodicity and two rotations

15:00 – 15:30 *Break*

15:30 – 16:00 **Gunther Leobacher**

On the length of arcs in labyrinth fractals

• **Friday, September 29, 2017**

10:00 – 12:00 **Informal Discussions**

10:30 – 11:00 *Coffee / Tea Break*

All talks take place at ESI, Boltzmann Lecture Hall!