

THE FIFTH INTERNATIONAL CONFERENCE
ON UNIFORM DISTRIBUTION THEORY
(UDT 2016)
SOPRON, HUNGARY,
JULY 5–8, 2016

ABSTRACT. This volume contains papers originally presented or inspired by the Fifth International Conference on Uniform Distribution Theory which was held in Sopron, Hungary, July 5–8, 2016.

Preface

This conference is direct continuation of the 1st International Conference in Marseilles, CIRM, France, January 21–25, 2008; the 2nd International Conference in Strobl am Wolfgangsee, Austria, July 5–9, 2010; the 3rd International Conference on Uniform Distribution Theory (UDT 2012) which was held in Smolenice, Slovakia, June 25–29, 2012; the 4th International Conference on Uniform Distribution Theory (UDT 2014) Ostravice, Czech Republic, June 30–July 4, 2014.

The latest 5th International Conference on Uniform Distribution Theory was held in Sopron, Hungary, July 5–8, 2016.

The program of the conference could be characterized by the following keywords related to Probabilistic Number Theory:

Uniform distribution modulo one; Zaremba-Halton net; Legendre sequences; Thue-Morse sequence; Higher order digital sequences; $\xi(3/2)^n \bmod 1$; sequences $n\alpha \bmod 1$; Strongly u.d. sequences; Automatic sequences; Prescribed distribution; Gaussian distribution; Irregularities of distribution; Discrepancy estimates; Small L_p discrepancy; Diaphony; Weighted sum-of-digits function; Trigonometric series; Random frequencies; lattice points; Irrational polytopes; Rational Diophantine sextuples; Spectral Banach problem; Weighted densities; On squares in finite fields; Effective diophantine results; Generalized polynomials; Minkowski-Voronoi continued fractions; Normal numbers; Nonresidue modulo a prime;

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lattice point sets; Divisible consecutive integers; Heilbronn sets; Cubic residues; Cyclic groups; linear complexity; p-adic integers; Exponential sums; Selberg zeta-function; Dedekind zeta-function; Dynamical zeta-functions; Difference set; Distribution of gaps; Consecutive gaps between primes; Digits of prime numbers; Pseudorandom binary lattices; Multiplicative subgroups; Product sets; Optimal transport; Perron numbers; Expansion complexity.

During the 5th International Conference on Uniform Distribution Theory, UDT *Editorial Board* meeting was held and the results are listed below.

Programme committee

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Plenary talks

- [1] CHRISTOPH AISTLEITNER: *A cheap proof of Hinrichs' theorem*
- [2] VLADIMÍR BALÁŽ—JANA FIALOVÁ—LADISLAV MIŠÍK, OTO STRAUCH: *Weighted sum-of-digits function*
- [3] ISTVÁN BERKES: *Trigonometric series with random frequencies*
- [4] BENCE BORDA: *The number of lattice points in irrational polytopes*
- [5] ANDREJ DUJELLA: *There are infinitely many rational Diophantine sextuples*
- [6] EL HOUCEIN EL ABDALAOU: *On the spectral Banach problem from the Scottish book and its polynomials*
- [7] FERDINÁND FILIP—JÓZSEF BUKOR—JÁNOS T. TÓTH: *The structure of weighted densities*
- [8] MIKHAIL GABDULLIN: *On squares in special sets in finite fields*
- [9] VASSIL GROZDANOV—VESNA DIMITRIEVSKA RISTOVSKA: *On the $(W_{G_{h,\phi};\alpha;\beta;\gamma})$ -diaphony of the net of Zaremba-Halton over finite groups (not presented)*
- [10] KATALIN GYARMATI: *On the complexity of a family of Legendre sequences with irreducible polynomials*
- [11] KÁLMÁN GYÓRY: *General effective diophantine results over finitely generated domains (not presented)*
- [12] JÁNOS FOLLÁTH—TAMÁS HERENDI: *On construction of sequences with Gaussian distribution*
- [13] ROSWITHA HOFER: *Uniform distribution modulo one of generalized polynomials*
- [14] GYULA KÁROLYI: *Irregularities of distribution with respect to round convex regions in the plane*
- [15] OLEG KARPENKOV: *Combinatorics of Minkowski-Voronoi multidimensional continued fractions*
- [16] IMRE KÁTAI: *Strongly UD mod 1 sequences, strongly q-ary normal numbers*
- [17] SERGEI KONYAGIN: *The Smallest simultaneous power nonresidue modulo a prime*

- [18] RALPH KRITZINGER: *Symmetrized point sets in the unit square with small L_p discrepancy*
- [19] HELENE LAIMER: *Reduced fast component-by-component constructions of lattice point sets*
- [20] GERHARD LARCHER: *On discrepancy estimates for sequences*
- [21] FLORIAN LUCA: *Consecutive integers divisible by the number of their divisors*
- [22] MANFRED G. MADRITSCH: *Multidimensional Heilbronn sets*
- [23] MÁTÉ MATOLCSI: *Sets avoiding quadratic or cubic residues in cyclic groups*
- [24] CHRISTIAN MAUDUIT: *The subsequence of Thue-Morse sequence along squares is normal*
- [25] LÁSZLÓ MÉRAI: *On the linear complexity of automatic sequences*
- [26] LADISLAV MIŠÍK—JÁNOS T. TÓTH: *Subsequences with prescribed distribution*
- [27] RADHAKRISHNAN NAIR: *On distribution of subsequences of the natural numbers on the p -adic integers*
- [28] WERNER GEORG NOWAK: *Estimates for single exponential sums*
- [29] FRIEDRICH PILLICHSHAMMER: *L_p -discrepancy and beyond of higher order digital sequences*
- [30] JÁNOS PINTZ: *Some problems of Erdős about consecutive gaps between primes*
- [31] ŠTEFAN PORUBSKÝ: *A geometric approach to properties of sequences $n\alpha$*
- [32] SUDHIR PUJAHARI: *Distribution of gaps between equidistributed sequences*
- [33] JOËL RIVAT: *On the digits of prime numbers*
- [34] IMRE RUZSA: *Differences and multiple sums*
- [35] RICHÁRD SEBŐK: *On imbalanced pseudorandom binary lattices*
- [36] ILYA SHKREDOV: *On additive decomposition of multiplicative subgroups*
- [37] IURII SHTEINIKOV: *On the product sets of rational numbers*
- [38] RAIVYDAS ŠIMÉNAS: *On the distribution of the a -values of the Selberg zeta-function*
- [39] OTO STRAUCH: *Mahler's conjecture on $\xi(3/2)^n \pmod{1}$*
- [40] ROBERT TICHY: *Uniform distribution and optimal transport*

- [41] ARTEM UVAKIN: *About two-dimensional sums' generalization*
- [42] JEAN-LOUIS VERGER-GAUGRY: *Dynamical zeta functions, asymptotic expansions and Perron numbers from trinomials*
- [43] ARNE WINTERHOF: *Expansion complexity and linear complexity of sequences over finite fields*

Results of UDT Editorial Board meeting

- There were the new members of the Editorial Board named:
Peter Grabner, Katalin Gyarmati, Peter Kritzer, Gerhard Larcher, János Pintz, Jean-Luis Verger-Gaugry.
- There was appointed by members of Conference Committee, namely by Oleg Kapenkov, Jean-Louis Verger Gaugry and Radhakrishnan Nair, that the upcoming conference UDT 2018 will be held at CIRM, at Luminy, France, on October 1–5, 2018.

List of participants

1. Christoph Aistleitner (TU Graz), aistleitner@math.tugraz.at
2. Vladimír Baláž (Slovak Technical University), vladimr.balaz@stuba.sk
3. István Berkes (TU Graz), berkes@tugraz.at
4. András Biró (MTA Rényi Intézet), biroand@renyi.hu
5. József Borbély (University of Obuda), borbely.jozsef@amk.uni-obuda.hu
6. Bence Borda (Rutgers University, New Jersey), bordabence85@gmail.com
7. Jean-Marie De Koninck (Laval University), jmdk@mat.ulaval.ca
8. Andrej Dujella (University of Zagreb), duje@math.hr
9. El Houcein El Abdalaoui (University of Rouen Normandy), elabeldh@gmail.com
10. Ferdinánd Filip (J. Selye University), filipf@ujs.sk
11. Mikhail Gabdullin (MUS), gabdullin.mikhail@ya.ru,
12. Vassil Grozdanov (South West University Neofit Rilski), vassgrozdanov@yahoo.com (absent)
13. Krisztián Gueth (University of West-Hungary), guethk@gmail.com
14. Katalin Gyarmati (Eötvös Loránd University), gykati@cs.elte.hu

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15. Kálmán Györy (University of Debrecen), gyory@science.unideb.hu (absent)
16. Peter Hellekalek (University of Salzburg), peter.hellekalek@sbg.ac.at
17. Tamás Herendi (University of Debrecen), herendi@inf.unideb.hu
18. Roswitha Hofer (Johannes Kepler University Linz),
roswitha.hofer@jku.at
19. Gyula Károlyi (Alfréd Rényi Institute of Math.), karolyi@cs.elte.hu
20. Oleg Karpenkov (University of Liverpool), karpenk@liv.ac.uk
21. Imre Kátai (ELTE), katai@inf.elte.hu
22. Sergei Konyagin (Steklov Institute of Mathematics),
konyagin23@gmail.com
23. Ralph Kritzing (Johannes Kepler University Linz),
ralph.kritzing@jku.at
24. Manfred Kühleitner (BOKU Vienna), manfred.kuehleitner@boku.ac.at
25. Helene Laimer (Ricam Linz), helene.laimer@ricam.oeaw.ac.at
26. Gerhard Larcher (University Linz), Gerhard.Larcher@jku.at
27. Florian Luca (Wits University), florian.luca@wits.ac.za
28. Manfred Madritsch (Université de Lorraine),
manfred.madritsch@univ-lorraine.fr
29. Máté Matolcsi (Rényi Institute, Budapest), matemato@gmail.com
30. Christian Mauduit (Université d'Aix-Marseille), mauduit@iml.univ-mrs.fr
31. László Mérai (RICAM), merai@cs.elte.hu
32. Ladislav Mišík (University of Ostrava), ladislav.misik@osu.cz
33. Radhakrishnan Nair (The University of Liverpool), nair@liv.ac.uk
34. László Németh (University of West Hungary),
nemeth.laszlo@emk.nyme.hu
35. Mario Neumüller (JKU Linz), mario.neumueller@jku.at
36. Werner Georg Nowak (BOKU Vienna,) nowak@boku.ac.at
37. Attila Pethó (University of Debrecen), petho.attila@inf.unideb.hu
38. Friedrich Pillichshammer (Johannes Kepler University Linz),
friedrich.pillichshammer@jku.at

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39. János Pintz (Rényi Institute, Hungarian Academy of Sciences),
pintz.janos@renyi.mta.hu
40. Štefan Porubský (Institute of Computer Science, Prague),
sporubsky@hotmail.com
41. Florian Puchhammer (Johannes Kepler University Linz),
florian.puchhammer@jku.at
42. Joël Rivat (Université d'Aix-Marseille), joel.rivat@univ-amu.fr
43. Imre Ruzsa (Rényi Institute), ruzsa@renyi.hu
44. András Sárközy (Eötvös Loránd University), sarkozy@cs.elte.hu
45. Richárd Sebök (Eötvös Loránd University), sebokr@cs.elte.hu
46. Ilya Shkredov (Steklov Institute of Mathematics),
ilya.shkredov@gmail.com
47. Iurii Shteinikov (Steklov Institute of Mathematics), yuriisht@gmail.com
48. Raivydas Šimėnas (Vilnius University), raivydas.simenas@mif.vu.lt
49. Vera T. Sós (Rényi. Math. Inst. of Hungarian Acad. of Sciences),
sos@renyi.hu
50. Oto Strauch (Mathematical Institute of the Slovak Academy of Sciences),
oto.strauch@mat.savba.sk
51. László Szalay (University of West Hungary), szalay.laszlo@nyme.hu.
52. Mihály Szalay (Eötvös Loránd University), mszalay@cs.elte.hu
53. Szabolcs Tengely (University of Debrecen), tengely@science.unideb.hu
54. Robert Tichy (TU Graz), tichy@tugraz.at
55. Artem Uvakin (Moscow State University), artemuvakin@gmail.com
56. Jean-Louis Verger-Gaugry (CNRS University Savoie Mont Blanc),
Jean-Louis.Verger-Gaugry@univ-smb.fr
57. Arne Winterhof (RICAM), arne.winterhof@oeaw.ac.at

*Krisztián Gueth
Tamás Herendi
László Németh
László Szalay*