

István Kolossváry

Curriculum Vitae

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Sep. 1. 2019 – Research Fellow in Analysis, University of St Andrews
Feb. 1. 2019 – July 31. 2019, Assistant Lecturer, Budapest University of Technology and Economics.
Sept. 1. 2015 – Jan. 31. 2019, Assistant Research Fellow, MTA-Alfréd Rényi Institute of Mathematics.

Education

- 2012–2019 **Doctoral School of Mathematics and Computer Science**, *Budapest University of Technology and Economics (BME)*, Supervisor: Dr. Károly Simon.
Thesis title: Fractals in dimension theory and complex networks
- 2009–2012 **Masters of Applied Mathematics**, *BME*, *highest honours*, Specialized in Stochastics.
- 2006–2009 **Bachelor of Mathematics**, *BME*, *Faculty of Natural Sciences*.

Professional activities

Publications

- Preprints
- **The L^q spectrum of self-affine measures on sponges**,
I. K., *arXiv2205.01043 link*, 2022.
 - **Intermediate dimensions of Bedford-McMullen carpets with applications to Lipschitz equivalence**, *A. Banaji, I. K.*, *arXiv2111.05625 link*, 2021.
- Published
- **The Assouad dimension of self-affine measures on sponges**,
J. M. Fraser, I. K., *Ergodic Theory Dynam. Systems*, FirstView, 2022.
 - **An upper bound for the intermediate dimensions of Bedford-McMullen carpets**,
I. K., *J. Fractal Geom.* Vol. 9(1), 151-169, 2022. *arXiv link to extended version*
 - **On the convergence rate of the chaos game**,
B. Bárány, N. Jurga, I. K., *Int. Math. Res. Not.* rnab370, 2022.
 - **Distance between natural numbers based on their prime signature**,
I. K., I. B. Kolossváry, J. Number Theory, Vol. 234, 120-139, 2022.
 - **Hausdorff measure and Assouad dimension of generic self-conformal IFS on \mathbb{R}** ,
B. Bárány, M. Rams, I. K., K. Simon, Proc. Roy. Soc. Edinburgh Sect. A, Vol. 151(6), 2051-2081, 2021.
 - **Triangular Gatzouras-Lalley-type planar carpets with overlaps**,
I. K., Károly Simon, Nonlinearity, Vol. 32(9), 3294-3341, 2019.
 - **Pointwise regularity of parameterized affine zipper fractal curves**,
B. Bárány, G. Kiss, I. K., *Nonlinearity*, Vol. 31(5), 1705-1733, 2018.
 - **Degrees and distances in random and evolving Apollonian networks**,
I. K., J. Komjáthy, L. Vágó, Adv. in Appl. Probab., Vol. 48(3), 865-902, 2016.
 - **On the absolute continuity of the Blackwell measure**,
B. Bárány, I. K., *J. Stat. Phys.*, Vol. 159(1), 158-171, 2015.
 - **First Passage Percolation on Inhomogeneous Random Graphs**,
I. K., J. Komjáthy, Adv. in Appl. Probab., Vol. 47(2), 589-610, 2015.

- **Multigraph limits and exchangeability**,
I. K., B. Ráth, *Acta Math. Hungar.*, Vol. 130, 1-34, 2011.
- Proceedings ○ **Explicit Evaluation of ME(3) Membership**, I. K., Miklós Telek, *8th Int. Conf. on Quantitative Evaluation of SysTems (QEST)*, fast abstract, pages 11-12, CTIT University of Twente, 2011

Invited (I) and contributed (C) conference talks

- 2022 Sept. **Various dimensions of self-affine measures on sponges** (C), *Fractals and Related Fields IV (FARF)*, Porquerolles, France.
- 2022 June **On the Convergence Rate of the Chaos Game** (C), *7th Cornell Conference on Analysis, Probability, and Mathematical Physics on Fractals*, Ithaca, USA.
- 2022 May **The L^q spectrum of self-affine measures on sponges** (I), *Workshop on affine and overlapping iterated function systems 2022*, Bristol, UK.
- 2022 Mar. **Intermediate dimensions of Bedford-McMullen carpets** (I), *Junior Ergodic Theory Meeting*, ICMS, Edinburgh, UK.
- 2018 Oct. **Triangular Gatzouras-Lalley-type planar carpets with overlaps**, *Fractal Geometry and Stochastics 6*, Bad Herrenalb, Germany.
- 2017 Dec. **Triangular Gatzouras-Lalley-type planar carpets**, *Workshop "Fractals and Dimensions"*, Institut Mittag-Leffler, Stockholm, Sweden.
- 2016 Apr. **Local Regularity of Affine Zipper Fractal Curves**, *Wandering Seminar Ergodic Theory and Dynamical Systems*, IMPAN Warsaw, Poland.
- 2016 Mar. **Small world phenomena for Random Apollonian Networks**, *British Mathematical Colloquium, speed talk*, Bristol, UK.
- 2015 Oct. **On the local Hölder exponent of de-Rham like fractal curves**, *Fractal Geometry and Dynamics*, Bedlewo, Poland.
- 2013 Aug. **Distances in random Apollonian networks**, *16th Int'l Conference on Random Structures and Algorithms*, Adam Mickiewicz University, Poznan, Poland.
- 2011 Oct. **Explicit identification of the class of order 3 matrix exponential distributions**, *Young European Queueing Theorists (YEQT V) Workshop on "Stochastic Networks and Optimization"*, Eurandom, Eindhoven, Netherlands.

Further conferences, workshops, study trips

- 2022 Rényi 100 poster, HUN; *Geometry of Deterministic and Random Fractals*, HUN
- 2020 *Fractals and Dynamics*, Bar-Ilan University IL
- 2019 *Dynamics, measures and dimensions* poster, PL; Research School in Thermodynamic Formalism, CIRM, FR
- 2018 *Geometric Measure Theory and its Connections* poster, FIN; FGS 6, GER
- 2017 *5th Heidelberg Laureate Forum*, DE; *Arbeitsgemeinschaft: Additive Comb., Entropy, and Fractal Geom.*, Oberwolfach; *Fractals and Dimensions*, Institut Mittag-Leffler, SE
- 2016 *University of Warwick* (UK) 3 month visit, also at St. Andrews, Bristol; *Brown University/ICERM* (USA) workshop, poster; *IMPAN* (PL) Wandering seminar
- 2015 Summer school and a two week study trip at *IMPA*, Brazil; *Fractals and Related Fields III.* conference poster, France; one month visit (Simons Semester) to *IMPAN*, Poland
- 2014 *Workshop on Fractals*, Israel; *Conference on Fractal Geometry and Stochastics V*, Germany; *Workshop Probability and Graphs* poster, Eindhoven

- 2013 *Int'l Conference on Fractals and Wavelets*, India; study trip to *Universiteit Leiden*
2012 study trip to *University of Warwick* and *Technische Universiteit Eindhoven*

Teaching

Lectures and practical courses for various BSc and MSc engineer students in linear algebra, calculus, (partial) DEs, probability and stochastic processes in English and Hungarian.

Awards

- 2017 Scholarship of the New National Excellence Program
2016 Gyula König Young Researcher Award
2015 Hungarian National Eötvös Scholarship; BME Research Grant I. Prize
2011 Fellowship of the Republic of Hungary; BME "Good student, good athlete" I. Prize; II. Prize, I. Prize and special prize at the Scientific Students' Associations Conference
2010 17th Int'l Mathematics Competition for University Students, Third Prize, Bulgaria
2006 Trefort Memorial Award, given to the best overall achievement by a high school senior

Languages

English	Advanced type C state accredited exam	<i>excellent, fluent</i>
German	Intermediate type C state accredited exam	<i>out of practice</i>

Miscellaneous

- Athletics: former member of the national team, podium placings at national championships, awarded "Good student, good athlete" of Hungary in 2010.
- Other interests include hiking, teaching, playing bridge, west coast swing, photography.

St Andrews, September 2022.