Konstantin Matetski

Given name as in passport: Kanstantsin
Joseph F. Ritt Assistant Professor

Columbia University, Department of Mathematics
Office 517, 2990 Broadway, New York, NY 10027
Phone: 212-854-4186, Email: matetski@math.columbia.edu

Education

University of Warwick, United Kingdom *Thesis advisor: Martin Hairer*	Mathematics	Ph.D.	2016
University of Bonn, Germany *Thesis advisor: Anton Bovier*	Mathematics	M.Sc.	2012
Belarusian State University, Belarus *Diploma advisor: Yuriy Kharin*	Applied Mathematics	Diploma	2010

Professional appointments

Joseph F. Ritt Assistant Professor	Columbia University, USA	2018 - 2022
Postdoctoral Fellow *Worked with Jeremy Quastel*	University of Toronto, Canada	2016 - 2018
Research Assistant	Institute for Applied Problems of Mathematics, Belarus	2006 - 2010
Itransition Software Development	Java Developer	Belarus, 2008
G2X Development Services	Java Developer	Belarus, 2007

Research grants, honors, awards

- *Bernoulli Society New Researcher Award 2022*. The Award is to be announced at the 42nd Conference on Stochastic Processes and their Applications to be held in Wuhan, China, June 27 - July 1, 2022
- NSF research grant DMS-1953859: *The Kardar-Parisi-Zhang universality of random growing interfaces*, Start date: July 1, 2020; Estimated end date: June 30, 2023; Amount: $149,043
- *Chancellor's International Scholarship*, University of Warwick, 2012 - 2016
- *Scholarship of the state North Rhine-Westphalia*, University of Bonn, 2010 - 2012
- Collaborative research grant of the Belarusian State University for the project *"Statistical analysis and forecasting of Markov stochastic sequences"*, 2009
- Scholarship of Priorbank (Raiffeisen Zentralbank Group) for the best students in Mathematics and Economics, Belarus, 2008

Teaching experience

Instructor Columbia University, 2018 - 2022	◇ Accelerated Multivariable Calculus ◇ Analysis and Optimization *I have taught three courses each year* ◇ A graduate course on Stochastic PDEs, Fall 2019
Instructor University of Toronto, 2016 - 2018	◇ Advanced Engineering Mathematics ◇ Linear Algebra I and II *I have taught one courses each term*
Teaching Assistant University of Warwick, 2013 - 2015	◇ Complex Analysis ◇ Stochastic Analysis (two terms) ◇ Second year supervisions – involved supervising small groups (5 students) in all areas of their mathematics study and marking their assignments
Teacher of Mathematics Suvorov Secondary School, Belarus, 2009 - 2010	◇ Conducted trainings to prepare schoolchildren for math competitions

Professional activities

- ◇ Project leader for Columbia Math Undergraduate Summer Research Program: *Critical fluctuations of the one-dimensional Ising model* (2021)
- ◇ Organization of the Columbia and Courant-Columbia probability seminars (2018 - 2020)
- ◇ Organization of the Integrable probability FRG conference at Columbia University (2020). The conference was canceled due to the pandemic.
- ◇ Co-supervision of Ph.D. students: Paolo Grazieschi (University of Bath), Shalin Parekh (Columbia University), and mentoring a high school student Sameer Pai (2019)
- ◇ Being a TA at the Graduate Summer School on Random Matrices, Park City Mathematics Institute, USA (2017)

Publications

1. *Directed mean curvature flow in noisy environment*, M.Hairer, A.Gerasimovics, K.Matetski, in preparation, 2021
2. *Martingale-driven approximations of singular stochastic PDEs*, P. Grazieschi, K.Matetski, H.Weber, in preparation, 2021. This is a generalization of my earlier work arXiv:1808.09429
3. *TASEP and generalizations: Method for exact solution*, K.Matetski, D.Remenik, arXiv:2107.07984, 2021. Submitted to Probability Theory and Related Fields
4. *The KPZ fixed point*, K.Matetski, J.Quastel, D.Remenik, to appear in *Acta Mathematica*, 2021
5. *Characterization of Brownian Gibbsian line ensembles*, E.Dimitrov, K.Matetski, to appear in *Annals of Probability*, 2021

6. *Exceptional times when the KPZ fixed point violates Johansson's conjecture on maximizer uniqueness*, I.Corwin, A.Hammond, M.Hegde, K.Matetski, arXiv:2101.04205, 2021. Submitted to Annals of Probability
7. *Stochastic PDE limit of the dynamic ASEP*, I.Corwin, P.Ghosal, K.Matetski, *Communications in Mathematical Physics*, 2020
8. *From the totally asymmetric simple exclusion process to the KPZ fixed point*, J.Quastel, K.Matetski, *Random matrices*, Vol. 26, IAS/Park City Mathematical Series, American Mathematical Society, 2019
9. *Space-time discrete KPZ equation*, G.Cannizzaro, K.Matetski, *Communications in Mathematical Physics*, 358(2), 2018
10. *Discretisations of rough stochastic PDEs*, M.Hairer, K.Matetski, *Annals of Probability*, 46(3), 2018
11. Ph.D. thesis, *Discretisations of rough stochastic partial differential equations*, University of Warwick, 2016, `wrap.warwick.ac.uk/81460/`
12. *Optimal rate of convergence of the stochastic Burgers-type equations*, M.Hairer, K.Matetski, *Stochastic PDEs: Analysis and Computations*, 3, no. 4, 2015
13. Master thesis, *Convergence of infinite dimensional stochastic processes*, University of Bonn, 2012 `bonnus.ulb.uni-bonn.de/SummonRecord/FETCH-bonn_catalog_36708172`
14. *On risk estimation of homogeneous finite Markov chains with unknown parameters*, Yu.Kharin, K.Matetski, Vestnik of Belarusian State University, 2010
15. *On forecasting of discrete time series based on Markov chains*, Yu.Kharin, K.Matetski, A.Pyatlitski, *Economics, modeling, forecasting*, 2008

Invited Talks and Lectures

- ◇ Russian Integrable Probability Seminar (Over Zoom, July 2021)
- ◇ Columbia-Princeton Probability Seminar (Over Zoom, May 2021)
- ◇ Columbia Probability Seminar (Over Zoom, May 2021)
- ◇ Kansas University, probability seminar (Over Zoom, Oct 2020)
- ◇ Bernoulli-IMS One World Symposium (Over Zoom, Aug 2020)
- ◇ Columbia University, Junior integrable probability seminar, (Over Zoom, May 2020)
- ◇ Temple and Penn joint probability seminar (Temple University, PA, Jan 2020)
- ◇ Workshop: Singular SPDEs and Related Topics (University of Bonn, Germany, Oct 2019)
- ◇ AMS Special Session on Analysis and Applications of Deterministic and Stochastic Evolution Equations (Binghamton University, Binghamton, NY, Oct 2019)
- ◇ AMS Special Session on Large Scale Properties of Interacting Stochastic Systems (University of Wisconsin-Madison, Madison, WI, Sep 2019)
- ◇ CUNY Probability Seminar (Sep 2019)
- ◇ Carnegie Mellon University, PA, probability seminar (Apr 2019)
- ◇ University of Rochester, NY, probability seminar (Apr 2019)

- ◇ University of Virginia, VA, probability seminar (Nov 2018)
- ◇ Columbia-Courant probability seminar, New York, NY (Oct 2018)
- ◇ Mini-course: *The KPZ fixed point*, International Program on Regularity Structures and Stochastic Systems, Academy of Mathematics and Systems Science, Beijing, China (Jul 2018)
- ◇ Fields Medal Symposium (Toronto, Oct 2017)
- ◇ University of Wisconsin-Madison, probability seminar (Oct 2017)
- ◇ Princeton University, probability seminar (Sep 2017)
- ◇ Columbia University, probability seminar (Sep 2017)
- ◇ Mathematical Congress of the Americas (Montreal, Canada, Jul 2017)
- ◇ University of Pisa, probability seminar (Italy, May 2017)
- ◇ Workshop: Qualitative Methods in KPZ Universality (Marseille, Italy, Apr 2017)
- ◇ EPSRC Symposium: Stochastic PDEs. Analysis and Computation (Warwick, UK, Mar 2017)
- ◇ Workshop: Stochastic Partial Differential Equations (Stony Brook, May 2016)
- ◇ Workshop: Rough Paths, Regularity Structures and Related Topics (Oberwolfach, May 2016)
- ◇ Berlin-Oxford Young Researchers Meeting on Applied Stochastic Analysis (Oxford, Dec 2016)
- ◇ Berlin-Oxford Young Researchers Meeting on Applied Stochastic Analysis (Oxford, Jul 2014)

References

Ivan Corwin	Columbia University, Department of Mathematics 2990 Broadway, Office 603, New York, NY 10027, USA ic2354@columbia.edu
Peter Friz	Technische Universität Berlin, Institut für Mathematik Straße des 17. Juni 136, D-10623 Berlin, Germany friz@math.tu-berlin.de
Alan Hammond	University of California at Berkeley, Departments of Mathematics and Statistics 899 Evans Hall, Berkeley, CA, 94720-3840, USA alanmh@stat.berkeley.edu
Martin Hairer	Imperial College London, Department of Mathematics London, SW7 2AZ, United Kingdom m.hairer@imperial.ac.uk
Jeremy Quastel	University of Toronto, Department of Mathematics 40 St. George St., Office 6224, Toronto, M5S 1L2, Canada quastel@math.toronto.edu