

Vitalii Konarovskiy

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Birth date and place: April 30, 1986, Ternopil Oblast, Ukraine
Married, 2 children

Work

- **Department of Mathematics, Hamburg University**
Substitute W2-professor Hamburg, Germany
Oct 2020 – present
- **Institute of Mathematics, Leipzig University**
Postdoc (on leave) Leipzig, Germany
Oct 2015 – present
 - – Mentor: Max von Renesse
- **Max Planck Institute for Mathematics in the Sciences**
Postdoc Leipzig, Germany
Oct 2014 – Oct 2015
 - – Mentor: Max von Renesse
- **Institute of Stochastics, Friedrich Schiller University Jena**
Postdoc Jena, Germany
Nov 2013 – Apr 2014
 - – Mentors: Björn Schmalfuss and Ilya Pavlyukevich
- **Department of Mathematics and Informatics,
Yuriy Fedkovych Chernivtsi National University**
Assistant professor Chernivtsi, Ukraine
Feb 2011 – Oct 2015
- **Institute of Mathematics of NAS of Ukraine**
Junior researcher Kiev, Ukraine
Nov 2010 – Feb 2011

Education

- **Institute of Mathematics of NAS of Ukraine**
Candidate of Sciences in Physics and Mathematics (PhD equivalent) Kiev, Ukraine
Nov 2007 – Nov 2010
 - Advisor: Andrey A. Dorogovtsev
 - Thesis: The system of interaction particles with variable weights
(date of degree: May 17, 2012)
- **Yuriy Fedkovych Chernivtsi National University**
Master's degree in Mathematics Chernivtsi, Ukraine
Sept 2006 – June 2007
 - Advisor: Andrey A. Dorogovtsev
 - Thesis: Some properties of coalescing Brownian motions
- **Yuriy Fedkovych Chernivtsi National University**
Bachelor's degree in Mathematics Chernivtsi, Ukraine
Sept 2002 – June 2006

- Advisor: Mykhailo I. Matiichuk
- Thesis: Control problem for a system of PDE with time dependent coefficients

Scholarships and Grants

- **Humboldt Research Fellowships for Postdoctoral Researchers** *Nov 2016 – Nov 2018*
Mathematisches Institut, Universität Leipzig Leipzig, Germany
- **Erasmus Mundus IANUS scholarship** *Nov 2013 – Apr 2014*
Institute of stochastics, Friedrich Schiller University Jena Jena, Germany
- **Participation in the Russian-Ukrainian Grant**
- **“Asymptotic Behavior of Stochastic Flows”**.
Stage 2 “Limit Theorems for Flows with Singularities” *2009 – 2010*
between the Department of Mechanics and Mathematics of Moscow State University and Institute of Mathematics NAS of Ukraine Heads: Vladimir I. Bogachev and Andrey A. Dorogovtsev
- **Participation in the Russian-Ukrainian Grant**
- **“Asymptotic Behavior of Stochastic Flows”** *2008 – 2009*
between the Department of Mechanics and Mathematics of Moscow State University and Institute of Mathematics NAS of Ukraine Heads: Vladimir I. Bogachev and Andrey A. Dorogovtsev

Short visits

- **School of Mathematics** *Sept 1 – Oct 2, 2019*
Jilin University (Visiting Professor) Changchun, China
- **IRMA** *Feb 9 – March 6, 2020*
University of Strasbourg (Visiting Professor) Strasbourg, France

Publications

1. *On Number of Particles in Coalescing-Fragmentating Wasserstein Dynamics*, preprint (6 pages), arXiv:2102.10943.
2. *On Conditioning Brownian Particles to Coalesce*, (with Victor Marx), preprint (45 pages), arXiv:2008.02568.
3. *Stochastic Block Model in a new critical regime and the Interacting Multiplicative Coalescent*, (with Vlada Limic), to appear in *Electron. J. Probab.* **26** (2021), no. 1, 23 pp., arXiv:2003.10958.
4. *Coalescing-fragmentating Wasserstein dynamics: particle approach*, preprint (62 pages), arXiv:1711.03011.
5. *Reversible Coalescing-Fragmentating Wasserstein Dynamics on the Real Line*, (with Max von Renesse), preprint (59 pages), arXiv:1709.02839.

6. *Sticky-Reflected Stochastic Heat Equation Driven by Colored Noise*, Ukrainian Math. J. **72** (2020), no. 9, 1195-1231.
7. *Dean-Kawasaki Dynamics with smooth Drift Potentials*, (with Tobias Lehmann and Max von Renesse), J. Stat. Phys. **178** (2020), no. 3, 666-681. MR4059955
8. *Dean-Kawasaki dynamics: ill-posedness vs. triviality*, (with Tobias Lehmann and Max von Renesse), Elect. Comm. Probab, **24** (2019), no. 8, 9 pp. MR3916340
9. *Modified massive Arratia flow and Wasserstein diffusion*, (with Max von Renesse), Comm. Pure Appl. Math. **72** (2019), no. 4, 764-800. MR3914882
10. *A system of coalescing heavy diffusion particles on the real line*, Ann. Probab. **45** (2017), no. 5, 3293–3335. MR3706744
11. *On asymptotic behavior of the modified Arratia flow*, Electron. J. Probab. **22** (2017), no. 19, 31 pp. MR3622889
12. *Large deviations principle for finite system of heavy diffusion particles*, Theory Stoch. Process. **19** (2014), no. 1, 37–45. MR3337132
13. *Mathematical model of heavy diffusion particles system with drift*, Commun. Stoch. Anal. **7** (2013), no. 4, 591–605. MR3213281
14. *The martingale problem for a measure-valued process with heavy diffusing particles*, Theory Stoch. Process. **17** (2011), no. 1, 50–60. MR3076876
15. *System of sticking diffusion particles of variable mass*, Ukrainian Math. J. **62** (2010), no. 1, 97–113. MR2888581
16. *On an infinite system of diffusing particles with coalescing*, Teor. Veroyatn. Primen. **55** (2010), no. 1, 157–167. MR2768524

Participation in Workshops and Conferences

- **Bernoulli-IMS One World Symposium 2020** *Online*
August 24-28, 2020
- **Geometry and Dynamics** *Jena, Germany*
July 5, 2019
Friedrich Schiller University Jena
- **Thematic programme “Optimal transport”** *Vienna, Austria*
May 15-24, 2019
ESI, University of Vienna
- **Mini School in Probability** *Changchun, China*
Apr 8-14, 2019
Jilin University
- **Berlin-Leipzig Workshop in Analysis and Stochastics** *Leipzig, Germany*
Jan 16-18, 2019
MPI Leipzig
- **Stoch. Equations, Limit Theorems and Statistics of Stoch. Processes** *Kiev, Ukraine*
Sep 17-22, 2018
Igor Sikorsky Kyiv Polytechnic Institute
- **12th International Vilnius Conf. on Probab. Th. and Math. Stat.** *Vilnius, Lithuania*
July 2-6, 2018
Vilnius University

- **Berlin-Leipzig Workshop in Analysis and Stochastics** *Leipzig, Germany*
MPI Leipzig Nov 29-Dec 01, 2017
- **Mitteldeutscher Stochastik Workshop** *Leipzig, Germany*
MPI Leipzig Nov 17-18, 2017
- **Metric Measure Spaces and Ricci Curvature** *Bonn, Germany*
MPI Bonn (without talk) Sept 04-08, 2017
- **PIMS-CRM Summer School in Probability** *Vancouver, Canada*
Pacific Institute for the Mathematical Sciences, UBC June 5-30, 2017
- **Stoch. calculus and geometry of stoch. flows and singular interactions** *Jena, Germany*
Friedrich Schiller University Jena Nov 15, 2016
- **Singular Random Dynamics** *Cetraro, Italy*
CIME-EMS Summer School (without talk) Aug 22-26, 2016
- **Berlin-Leipzig workshop in analysis and stochastics** *Leipzig, Germany*
MPI Leipzig April 13-15, 2016
- **Stochastic Analysis 2015: Halle-Jena-Leipzig** *Halle, Germany*
Martin-Luther-Universität Halle-Wittenberg Oct 16-17, 2015
- **Workshop on Levy-Driven Stochastic Dynamics** *Jena, Germany*
Friedrich Schiller University Jena April 17, 2014
- **11th International Vilnius Conf. on Probab. Th. and Math. Stat.** *Vilnius, Lithuania*
Vilnius University June 30-July 4, 2014
- **Infinite dimensional stochastic systems: Theory and applications** *Wittenberg, Germany*
(poster talk) Jan 13-16, 2014
- **Bogolyubov readings DIF-2013.** *Sevastopol, Ukraine*
June 23-30, 2013
- **Stochastic Analysis and Random Dynamical Systems** *Lviv, Ukraine*
Ivan Franko National University of Lviv June 14-20, 2009

Seminar talks

- “Malliavin Calculus and its Application”, Institute of Mathematics NAS of Ukraine, Kiev, Ukraine (Feb 2021)
- “Kolloquium über Mathematische Statistik und Stochastische Prozesse”, Hamburg University, Germany (Nov 2020)
- “Malliavin Calculus and its Application”, Institute of Mathematics NAS of Ukraine, Kiev, Ukraine (April 2020, September 2020)
- “Séminaire (de calcul) stochastique”, Institut de Recherche Mathématique Avancée, Strasbourg, France (March 2020)
- “Malliavin Calculus and its Application”, Institute of Mathematics NAS of Ukraine, Kiev, Ukraine (Nov 2019)

- Heriot-Watt University, Edinburgh, UK (June 2019)
- “Séminaire (de calcul) stochastique”, Institut de Recherche Mathématique Avancée, Strasbourg, France (April 2019)
- “Malliavin Calculus and its Application”, Institute of Mathematics NAS of Ukraine, Kiev, Ukraine (March 2019)
- “Research Seminar RTG 2131”, University of Duisburg-Essen, Germany (Oct 2018)
- “Probability”, University of Cambridge, UK (May 2018)
- “ProbL@b seminar”, University of Bath, UK (May 2018)
- “Statistical Mechanics Seminar”, University of Warwick, UK (Mar 2018)
- “Research Unit — Rough paths, stochastic partial differential equations and related topics”, TU Berlin, Germany (Feb 2018)
- “Arbeitsgemeinschaft ANGEWANDTE ANALYSIS”, MPI Leipzig, Germany (Jan 2018)
- “Oberseminar Analysis”, Institute for Applied Mathematics, Universität Bonn, Germany (Dec 2016)
- “Arbeitsgemeinschaft ANGEWANDTE ANALYSIS”, MPI Leipzig, Germany (June 2015)
- MPI Leipzig, Germany (April 2014)
- Weierstrass Institute for Applied Analysis and Stochastics, Berlin, Germany (April 2014)
- “Malliavin Calculus and its Application”, Institute of Mathematics NAS of Ukraine, Kiev, Ukraine (May 2014)
- Institute of Stochastics, Friedrich Schiller University Jena, Germany (Dec 2013)
- Department of Mathematics and Informatics, Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine (June 2013, Jan 2011)
- “Malliavin Calculus and its Application”, Institute of Mathematics NAS of Ukraine, Kiev, Ukraine (May 2012, Feb 2011, Nov 2010, June 2010, Dec 2009, Jan 2009, May 2008)
- “Theory of stochastic processes”, Faculty of Physics and Mathematics, Kiev Polytechnic Institute, Ukraine (June 2011)
- “Stochastic Differential Equations”, Faculty of Mechanics and Mathematics, Taras Shevchenko National University of Kiev, Ukraine (June 2011)
- Faculty of Mechanics and Mathematics, University of Lviv, Ukraine (May 2011)
- “Infinite Dimensional Analysis and Stochastics”, Department of Mechanics and Mathematics, Moscow State University, Russian Federation (Oct 2008)

Teaching

Lectures:

- [An introduction to large deviations](#) *Hamburg University, WS 2020/21*
- [Seminar - Stoch. flows with interaction and random measures](#) *Hamburg University, WS 2020/21*
- [Stochastik 2 für Studierende der Informatik](#) *Hamburg University, WS 2020/21*
- [Mathematics 4 for physicists](#) *Leipzig University, SS 2020*
- [An introduction to large deviations](#) *Leipzig University, WS 2019/20*
- [Mathematics 3 for physicists](#) *Leipzig University, WS 2019/20*
- [An introduction to large deviations \(mini-course\)](#) *Jilin University, China, Sep 2019*
- [Mathematics 2 for physicists](#) *Leipzig University, SS 2019*
- [Mathematics 1 for physicists](#) *Leipzig University, WS 2018/19*
- [Mathematics 4 for physicists](#) *Leipzig University, SS 2016*
- [Mathematics 3 for physicists](#) *Leipzig University, WS 2015/16*
- [Stochastic processes](#) *Chernivtsi University, WS 2013/14*
- [Mathematical statistics](#) *Chernivtsi University, WS 2013/14*
- [Theory of semi-groups of Markov processes](#) *Chernivtsi University, WS 2013/14*
- [Probability](#) *Chernivtsi University, SS 2013*
- [Theory of semi-groups of Markov processes](#) *Chernivtsi University, WS 2012/13*
- [Mathematical statistics](#) *Chernivtsi University, WS 2012/13*
- [Stochastic processes](#) *Chernivtsi University, WS 2012/13*
- [Probability](#) *Chernivtsi University, SS 2012*
- [Mathematical statistics](#) *Chernivtsi University, WS 2011/12*

Teaching seminars:

- [Mathematical statistics](#) *Chernivtsi University, WS 2013/14*
- [Theory of semi-groups of Markov processes](#) *Chernivtsi University, WS 2013/14*
- [Probability and mathematical statistics](#) *Chernivtsi University, WS 2013/14*
- [Markov and semi-Markov processes](#) *Chernivtsi University, SS 2013*
- [Probability](#) *Chernivtsi University, SS 2013*
- [Probability and mathematical statistics](#) *Chernivtsi University, SS 2013*
- [Mathematical statistics](#) *Chernivtsi University, WS 2012/13*

- Stochastic processes *Chernivtsi University, WS 2012/13*
- Markov and semi-Markov processes *Chernivtsi University, WS 2012/13*
- Probability and mathematical statistics *Chernivtsi University, WS 2012/13*
- Theory of semi-groups of Markov processes *Chernivtsi University, WS 2012/13*
- Probability *Chernivtsi University, SS 2012*
- Probability and mathematical statistics *Chernivtsi University, SS 2012*
- Markov and semi-Markov processes *Chernivtsi University, SS 2012*
- Mathematical statistics *Chernivtsi University, WS 2011/12*
- Probability *Chernivtsi University, WS 2011/12*
- Probability and mathematical statistics *Chernivtsi University, WS 2011/12*
- Stochastic processes *Chernivtsi University, WS 2011/12*
- Probability and mathematical statistics *Chernivtsi University, SS 2011*
- Mathematical statistics *Kiev Polytechnic Institute, SS 2010*
- Probability *Kiev Polytechnic Institute, WS 2009/10*

Supervision of master students:

- Dumytrash Khrystyna (Chernivtsi University, 2013-2014)
Asymptotic behaviour of a heavy diffusion particle in Arratia flow
- Romaniuk Tetiana (Chernivtsi University, 2013-2014)
Generalized system of heavy diffusion particles
- Litvinchuk Yulia (Chernivtsi University, 2012-2013)
Voter model with continuous number of states

Supervision of bachelor students:

- Mathilda Schwarz (Hamburg University, 2020-2021)
Scaling limits for critical inhomogeneous random graphs
- Pazuk Oksana (Chernivtsi University, 2012-2013)
Asymptotic behaviour of a particle model with annihilation
- Romaniuk Tetiana (Chernivtsi University, 2012-2013)
A particle model with reflecton
- Litvinchuk Yulia (Chernivtsi University, 2011-2012)
On a rescaling limit of voter model

Organizer of mathematical circles and reading seminars:

- Mathematical circle *Chernivtsi University*
• “Interesting Problems of Probability and Theory of Stochastic Processes” *SS 2011*
- Reading seminar *Institute of Mathematics of NASU*
• “Stochastic Flows and Stochastic Differential Equations” *SS 2010*