Dmitri Finkelshtein   *Curriculum vitae*

Contact Information

Department of Mathematics
College of Science
Swansea University
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Research Interests

Mathematical theory of complex systems and their applications; infinite-dimensional and stochastic analysis; probability theory and point processes; scaling limits and related meso- and macroscopic equations; front propagation and travelling waves.

Experience

- Swansea University, United Kingdom
  Senior Lecturer, Department of Mathematics   March 2017 – Present
  Lecturer, Department of Mathematics   September 2013 – February 2017

- Bielefeld University, Germany
  Scientific Fellow, Department of Mathematics   March 2013 – August 2013

- Institute of Mathematics, Kiev, Ukraine
  Senior Research Fellow, Department of Fractal Analysis   September 2009 – Present
  Research Fellow, Department of Fractal Analysis   January 2008 – August 2009
  Junior Research Fellow, Department of Mathematical Physics   December 2003 – December 2007

- Dragomanov National Pedagogical University, Kiev, Ukraine
  Leading Research Fellow   January 2015 – Present
  Senior Research Fellow   August 2013 – December 2014
  Associate Professor   September 2008 – June 2013

Degrees and Education

- DSc (Doctor of Sciences, Habilitation)   June 2014
  Title: Stochastic dynamics of continuous systems
  Host: Institute of Mathematics, Kiev, Ukraine

- PhD in Mathematics   November 2004
  Title: Some classes of measures and related operators on configuration spaces
  Advisor: Prof. Dr. Yuri Kondratiev
  Host: Institute of Mathematics, Kiev, Ukraine

- MSc in Mathematics, *graduated with distinction*   June 2000
  Title: Gauss formula and symmetric extensions of the Laplacian on configuration spaces
  Advisor: Dr. Alexei Konstantinov
  Host: Taras Shevchenko National University of Kiev

- BSc in Mathematics, *graduated with distinction*   June 1999
  Title: On exponential model of Poisson spaces
  Advisor: Dr. George Us
  Host: Taras Shevchenko National University of Kiev

Honors and Awards

- Winner of the Mathematical Competition for young mathematicians in Ukraine ($ 6000)   2012

- The Ukraine President Prize for young scientists (∼£1000)   2009

- George Soros' Prize for Students ($ 800)   1996

Grants and Fellowships

- LMS, Research in Pairs, Scheme 4 (£500)   2016
- College of Science (Swansea University) Research Funds (£730, £400, £450)   2014, 2015, 2016
- LMS, Joint Research Groups in the UK, Scheme 3, Co-Investigator (£2000)   2015–2016
- IRSES (Marie Curie Actions) Project, Grant number PIRSES-GA-2013-612669
  Co-Investigator, Ukrainian team leader (€74100)   2014–2017
- The Ukraine President Grant for young scientists (∼£5800)   2012
- The Ukraine President Fellowship for young scientists   2011–2013
- Individual research grant of the Ukrainian National Academy of Sciences (∼£1600)   2011
- Fellowship of the Ukrainian National Academy of Sciences   2008–2010
- Grant of the Ukrainian National Academy of Sciences (∼£1000)   2006–2007

Research Visits

- Faculty of Mathematics, Bielefeld University, Germany   2001–2012, 2014–2016
- Department of Statistics, Warwick University, UK   December 2016
- Faculty of Mathematics, Technische Universität Kaiserslautern, Germany   June 2016
- Department of Biosciences, Helsinki University, Finland   December 2012, April 2015
- Centro de Ciências Matemáticas, University of Madeira, Portugal   July 2008, August 2009
- Institute for Applied Mathematics, Bonn University, Germany   April 2000

Selected papers

1. D. Finkelshtein, Y. Kondratiev, Y. Kozitsky, and O. Kutoviy. The statistical dynamics of a spatial logistic model and the related kinetic equation. *Math. Models Methods Appl. Sci.* **25**(2) (2015), 343–370.
2. D. Finkelshtein, Y. Kondratiev, O. Kutoviy, and M. J. Oliveira. Dynamical Widom–Rowlinson model and its mesoscopic limit. *J. Stat. Phys.* **158**(1) (2015), 57–86.
3. D. Finkelshtein, Y. Kondratiev, O. Kutoviy, and E. Zhizhina. On an aggregation in birth-and-death stochastic dynamics. *Nonlinearity* **27** (2014), 1105–1133.
4. D. Finkelshtein, Y. Kondratiev, and Y. Kozitsky. Glauber dynamics in continuum: a constructive approach to evolution of states. *Discrete and Cont. Dynam. Syst. - Ser A.* **33**(4) (Apr. 2013), 1431–1450.
5. D. Finkelshtein, Y. Kondratiev, and O. Kutoviy. Establishment and fecundity in spatial ecological models: statistical approach and kinetic equations. *Infin. Dimens. Anal. Quantum Probab. Relat. Top.* **16**(2) (2013), 1350014 (24 pages).
6. D. Finkelshtein, Y. Kondratiev, and O. Kutoviy. Semigroup approach to birth-and-death stochastic dynamics in continuum. *J. Funct. Anal.* **262**(3) (2012), 1274–1308.
7. D. Finkelshtein, Y. Kondratiev, O. Kutoviy, and E. Zhizhina. An approximative approach for construction of the Glauber dynamics in continuum. *Math. Nachr.* **285**(2–3) (2012), 223–235.
8. D. Finkelshtein, Y. Kondratiev, O. Kutoviy, and E. Lytvynov. Binary jumps in continuum. II. Non-equilibrium process and a Vlasov-type scaling limit. *J. Math. Phys.* **52** (2011), 113301:1–27.
9. D. Finkelshtein, Y. Kondratiev, and O. Kutoviy. Individual based model with competition in spatial ecology. *SIAM J. Math. Anal.* **41**(1) (2009), 297–317.
10. D. Finkelshtein, Y. Kondratiev, and M. J. Oliveira. Markov evolutions and hierarchical equations in the continuum. I. One-component systems. *J. Evol. Equ.* **9**(2) (2009), 197–233.

Recent preprints

- D. Finkelshtein, Y. Kondratiev, and P. Tkachov. "Accelerated front propagation for monostable equations with nonlocal diffusion". arXiv: 1611.09329 (66 pages).
- D. Finkelshtein, Y. Kondratiev, and P. Tkachov. "Traveling waves and long-time behavior in a doubly nonlocal Fisher–KPP equation". arXiv:1508.02215 (100 pages).

CONFERENCES AND WORKSHOPS

- *Modelling Tumour Evolution: Initiation, Growth and Progression*, Bielefeld, Germany, 11–17/9/2016
- *Stochastic Analysis and Applications*, Beijing, China, 1–6/4/2016
- *Nonlocal Aspects in Mathematical Biology*, Bedlewo, Poland, 26–30/1/2016
- *Micro and Macro Systems in Life Sciences*, Bedlewo, Poland, 8–13/4/2015
- *Probability, Reliability and Stochastic Optimization*, Kyiv, Ukraine, 7–10/4/2015
- *Stochastic and Infinite Dimensional Analysis*, Bielefeld, Germany, 24–28/6/2013
- *Fusion of Knowledge in Stochastic Modelling of Large Complex Systems*, Bielefeld, Germany, 10–14/6/2013
- *Modern Stochastics: Theory and Applications I–III*, Kiev, Ukraine, 19–23/6/2006, 7–11/9/2010, 10–14/9/2012
- *Quantitative Behavior of Stochastic Systems and Applications*, Bielefeld, Germany, 18–22/6/2012
- *Stochastic analysis and applications*, Kiev, Ukraine, 29–30/3/2011
- Minisymposium *Interacting Particle Systems and related non-linear (stochastic) Evolution Equations*, DMV-Jahrestagung (Annual Conference of German Mathematical Society), Cologne, Germany, 19–22/9/2011
- *Functional Methods in Probability Theory and Probabilistic Number Theory*, Kiev, Ukraine, 28–30/9/2011
- *Stochastic Population Dynamics and Applications in Spatial Ecology*, Edinburgh, UK, 15–20/6/2009
- *Particle Systems, Feynman Integrals, Stochastic Analysis*, Funchal, Madeira, Portugal, 24/7–7/8/2009
- Ukrainian Mathematical Congress, Kiev, Ukraine, 27–29/8/2009
- *Infinite Particle Systems 1–5*, Kazimierz Dolny, Poland, 22–27/10/2005, 8–11/10/2006, 23–28/6/2007, 8–12/9/2008, 21–25/9/2009
- *IDA and Applications to Feynman Integrals and Particle Systems*, Funchal, Madeira, Portugal, 15/7–8/8/2008
- *Skorokhod Space. 50 Years on*, Kiev, Ukraine, 17–23/6/2007
- *Stochastic Analysis and Applications*, Hammamet, Tunisia, 5–10/11/2007
- *Symmetry in Nonlinear Mathematical Physics*, Kiev, Ukraine, 23—29/6/2003, 20–26/6/2005
- *Modern Problems And New Trends In Probability Theory*, Chernivtsi, Ukraine, 19–26/6/2005
- Conference dedicated to 90th anniversary of B. V. Gnedenko, Kiev, Ukraine, 3–7/6/2002
- Ukrainian mathematical congress, Kiev, Ukraine, 22–26/8/2001

RECENT TALKS ON SEMINARS AND ONE-DAY MEETINGS

- University of Birmingham, UK, 16/12/2016
- Durham University, UK, 27/9/2016
- Kaiserslautern University of Technology, Germany, 8/6/2016
- University of Dundee, UK, 18/1/2016
- Institute of Mathematics, Kiev, Ukraine, 16/12/2015
- University of York, UK, 10/12/2015
- University of Reading, UK, 1/12/2015
- University of Bielefeld, Germany, 18/11/2015
- Cardiff University, UK, 25/9/2015
- University of York, UK, 17/11/2014
- Aix-Marseille University, France, 4/3/2013

PROFESSIONAL MEMBERSHIPS

- London Mathematical Society   since 2015
- Kiev Mathematical Society   since 2008

TEACHING QUALIFICATION

- Fellow of the Higher Education Academy, recognition reference number: PR110110   July 2016

ADMINISTRATIVE RESPONSIBILITIES (SWANSEA UNIVERSITY)

- Head of the Foundation Year   2014–2016
- Web officer (seminars, past exam papers, compliance)   2013 – Present

TEACHING PRACTICE

- Regular Courses taught at Swansea University, UK
  Year 0: Fundamental Geometry, Fundamental Mathematics;
  Year 1: Calculus for Physicists, Classical Mechanics of Particles;
  Years 3/M: Differential Equations, Functional Analysis

- Special Course taught at Taras Shevchenko National University of Kiev, Ukraine
  MSc: Statistics of Stochastic Point Processes

- Regular Courses taught at Dragomanov National Pedagogical University, Kiev, Ukraine
  Final Year: Probability Theory, Mathematical Statistics, Introduction to Stochastic Processes
  MSc: Mathematical modelling, Risk Theory, Actuary computations, Mathematical Structures

STUDENT SUPERVISION

- Swansea University, UK
  MPhil: Youngseo Chi (current)
  MSc (Taught Masters): J. Nkemachor, L. Fulgoni (2014); Y. Liu, K. Rohbani-Eivazi (2015), J. Guo, E. A. Abrahams (2016)
  MMath: A. Howat, J. L. Kent (2015)
  BSc: A. E. Lawrence, C. Osborne, L. J. Massie, A. I. Bailey, R. Miles-Hewinson (2014); S. Telford, M. Morris, X. Li (2015); R. E. Bowers-James, D. Declan, R. K. Zafar (2016)

- Dragomanov National Pedagogical University, Kiev, Ukraine
  I. Polushina, I. Omelchenko, R. Bobovsky, V. Mazurenko (2009); O. Savych, S. Chalyuk, V. Karabanov, D. Karnauch (2010); N. Procyuk, O. Tilchenko, S. Grynyuk, A. Gumenyuk (2011); P. Donchenko Petr, D. Isaenko, O. Maiboroda, P. Naumenko (2012)

SOFTWARE SKILLS

- Computer Programming: Visual Basic, VBA, VBScript, Pascal, Delphi, Python

- Internet Technologies: HTML, CSS, PHP, MySQL, JavaScript

- Mathematical Computing: Mathematica, Maple, Matlab

- TEX-world: (LA)TEX, BIBTEX, PGF/TikZ, most common packages

- Scientific Graphics: METAPOST, Asymptote, GeoGebra, Gnuplot

- Operating systems: Microsoft Windows family, Ubuntu, Android, OS X

- Desktop Publishing: Adobe InDesign, Corel Ventura, Quark XPress

LANGUAGES

Russian - Mother tongue, Ukrainian - Native, English - Fluent, German - Reading&Listening