

PERSONAL INFORMATION

Kamil Kaleta born 20 Aug 1984 in Skarżysko Kamienna, Poland
e-mail: kamil.kaleta@pwr.edu.pl
<http://www.im.pwr.wroc.pl/~kaleta>
(nationality: Polish)

EDUCATION

2011 PhD obtained at Wrocław University of Technology (Poland)
Thesis: *Potential theory of fractional powers of Laplace operator and related Schrödinger operators* (with distinction)
Advisor: Prof. Tadeusz Kulczycki

2008–2011 PhD studies in mathematics
Wrocław University of Technology (Poland)

2003–2008 MSc studies in Theoretical Mathematics
Wrocław University of Technology (Poland)
Thesis: *Potential theory of α -stable Lévy motion on fractals* (with distinction)
Advisors: Prof. Tomasz Byczkowski and Prof. Mateusz Kwaśnicki

PROFESSIONAL EXPERIENCE

2015–... Wrocław University of Science and Technology (Poland)
Assistant Professor

2016–2017 Technische Universität Dresden (Germany)
Humboldt Research Fellow (postdoc)

2012–2015 University of Warsaw (Poland)
Research Assistant (postdoc)

2011–2015 Wrocław University of Technology (Poland)
Teaching and Research Assistant

RESEARCH INTERESTS

- Schrödinger perturbations of Markov processes with jumps
- Applications of probabilistic potential theory in mathematical physics
- Spectral theory of semigroups corresponding to non-local Schrödinger operators
- Approximation and estimates of semigroups (kernels) of jump Markov processes
- Stochastic processes on fractals and in random media, random Schrödinger operators

AWARDS

- 2015 Humboldt Research Fellowship (Alexander von Humboldt Foundation, Germany)
- 2014/2015 Kazimierz Kuratowski Scholarship (Institute of Mathematics of the Polish Academy of Sciences)
- 2014 Kazimierz Kuratowski Prize (Institute of Mathematics of the Polish Academy of Sciences and Polish Mathematical Society)
- 2014, 2015 START Scholarship (Foundation for Polish Science)
- 2014 Jean-Paul Gimon Chair (Institut des Hautes Études Scientifiques, France)
- 2012–2015 Post-doctoral research internship FUGA 1 (National Science Center, Poland)
- 2012, 2016 Wrocław University of Technology Rector's prize for outstanding contributions to the university
- 2008 2nd prize in the Polish Mathematical Society competition for the best student's paper in the field of probability theory and mathematical applications
- 2007 Socrates-Erasmus Scholarship (Université d'Angers, France)

GRANTS AND RESEARCH PROJECTS

- 2016–2017 Alexander von Humboldt Foundation, Germany, fellowship grant 1164441
Schrödinger perturbations of jump Lévy processes
PI: K. Kaleta (Host: Prof. René L. Schilling)
- 2016–2021 NCN (National Science Center, Poland) grant 2015/18/E/ST1/00239
Inequalities and differential equations related to Markov operators
PI: T. Jakubowski
- 2016–2019 NCN (National Science Center, Poland) grant 2015/17/B/ST1/01233
Properties of solutions to nonlocal equations
PI: T. Kulczycki
- 2012–2015 NCN (National Science Center, Poland) internship grant 2012/04/S/ST1/00093
Jump Markov processes and their Schrödinger perturbations
PI: K. Kaleta (Host: Prof. Katarzyna Pietruska-Pałuba)
- 2012–2015 NCN (National Science Center, Poland) grant 2011/03/D/ST1/00311
Spectral theory for Lévy processes
PI: M. Kwaśnicki
- 2010–2011 MNiSW (Ministry of Science and Higher Education, Poland) PhD grant N N201 527338
Potential theory for fractional powers of Laplacian and related Schrödinger operators
PI: K. Kaleta (Advisor: Prof. Tadeusz Kulczycki)
- 2009–2012 MNiSW (Ministry of Science and Higher Education, Poland) grant N N201 373136
Potential theory of a class of Lévy processes and their Feynman-Kac semigroups
PI: T. Byczkowski

PUBLICATIONS

- 2017 *Contractivity and ground state domination properties for non-local Schrödinger operators*
J. Spectr. Theory, to appear, available at arXiv:1509.08319 (with M. Kwaśnicki and J. Lőrinczi)
- 2016 *Fall-off of eigenfunctions for non-local Schrödinger operators with decaying potentials*
Potential Anal. DOI:10.1007/s11118-016-9597-3 (with J. Lőrinczi)
- 2016 *Asymptotic estimate of eigenvalues of pseudo-differential operators in an interval*
J. Math. Anal. Appl. 439 (2), 896-924 (with M. Kwaśnicki and J. Małecki)
- 2016 *Transition in the decay rates of stationary distributions of Lévy motion in an energy landscape*
Phys. Rev. E 93, 022135 (with J. Lőrinczi)
- 2015 *Estimates of transition densities and their derivatives for jump Lévy processes*
J. Math. Anal. Appl. 431 (1), 260-282 (with P. Sztonyk)
- 2015 *Small time sharp bounds for kernels of convolution semigroups*
J. Anal. Math., to appear, available at arXiv:1403.0912 (with P. Sztonyk)
- 2015 *Pointwise eigenfunction estimates and intrinsic ultracontractivity-type properties of Feynman-Kac semigroups for a class of Lévy processes*
Ann. Probab. 43 (3), 1350-1398 (with J. Lőrinczi)
- 2015 *Integrated density of states for Poisson-Schrödinger perturbation of subordinate Brownian motions on the Sierpiński gasket*
Stochastic Process. Appl. 125 (4), 1244-1281 (with K. Pietruska-Pałuba)
- 2014 *Spectral and analytic properties of non-local Schrödinger operators and related jump processes*
Comm. Appl. Ind. Math. (CAIM) 6 (2), 534 (with J. Lőrinczi and S. Durugo)
- 2013 *One-dimensional quasi-relativistic particle in the box*
Rev. Math. Phys. 25 (8), 135001 (with M. Kwaśnicki and J. Małecki)
- 2013 *Upper estimates of transition densities for stable-dominated semigroups*
J. Evol. Equ. 13 (3), 633-650 (with P. Sztonyk)
- 2012 *Fractional $P(\phi)_1$ -processes and Gibbs measures*
Stochastic Process. Appl. 122 (10), 3580-3617 (with J. Lőrinczi)
- 2012 *Spectral gap lower bound for 1-D fractional Schrödinger operator in the interval*
Studia Math. 209, 267-287
- 2010 *Intrinsic ultracontractivity for Schrödinger operators based on fractional Laplacians*
Potential Anal. 33 (4), 313-339 (with T. Kulczycki)
- 2010 *Boundary Harnack inequality for α -harmonic functions on the Sierpiński triangle*
Probab. Math. Statist. 30 (2), 353-368 (with M. Kwaśnicki)

PAPERS UNDER REVIEW

- 2016 *The quenched asymptotics for nonlocal Schrödinger operators with Poissonian potentials*, 1-36
under review, available at arXiv:1601.05597 (with K. Pietruska-Pałuba)
- 2014 *Lifschitz singularity for subordinate Brownian motions in presence of the Poissonian potential on the Sierpiński gasket*, 1-39
under review, available at arXiv:1406.5651 (with K. Pietruska-Pałuba)

PREPRINTS

- 2017 *Typical long time behaviour of ground state-transformed jump processes*, preprint
(with J. Lőrinczi)
- 2017 *Spatial asymptotics at infinity for heat kernels of integro-differential operators*, preprint
(with P. Sztonyk)
- 2017 *Zero-energy bound state decay for non-local Schrödinger operators*, preprint
(with J. Lőrinczi)

RESEARCH VISITS AND VISITING FELLOWSHIPS

- 2016-2017 Technische Universität Dresden, Dresden, Germany
- 2016 Seoul National University, Seoul, Republic of Korea
- 2010, 2013, 2016 Loughborough University, Loughborough, UK
- 2014 Technische Universität Wien, Vienna, Austria
- 2013 Institut Mittag-Leffler, Stockholm, Sweden
- 2011 International Centre for Mathematical Sciences (ICMS), Edinburgh, UK
- 2010, 2012, 2014 Institut des Hautes Études Scientifiques (IHÉS), Bures-sur-Yvette, France
- 2007 Université d'Angers, Angers, France

SELECTED CONFERENCES

- 2016 *3rd Workshop on Probability Theory and its Applications*
Seoul, Republic of Korea (invited speaker)
- 2016 *3rd Conference on Nonlocal Operators and Partial Differential Equations*
Będlewo, Poland (invited speaker)
- 2016 *Workshop on Stochastic Analysis and Related Topics 2016*
Dresden, Germany (invited speaker)
- 2016 *14th Conference on Probability*
Będlewo, Poland (invited speaker)
- 2015 *Workshop on Stochastic Analysis and Related Topics 2015*
Dresden, Germany (invited speaker)
- 2015 *Probability and Analysis*
Będlewo, Poland (invited speaker)
- 2014 *Fractional Calculus, Probability and Non-Local Operators: Applications and Recent Developments*
Bilbao (BCAM), Spain (invited speaker)

- 2014 *DMV-PTM Joint Meeting*
Poznań, Poland (invited talk at the thematic session *Non-local Phenomena: Lévy processes and related operators*)
- 2014 *International Conference on Stochastic Processes, Analysis and Mathematical Physics*
Osaka, Japan (contributed talk)
- 2014 *XXXII International Seminar on Stability Problems for Stochastic Models*
Trondheim, Norway (talk)
- 2013 *7th International Conference on Lévy processes: Theory and Applications*
Wrocław, Poland (local organizer)
- 2013 *Satellite Summer School to the 7th International Conference on Lévy processes*
Będlewo, Poland (co-organizer)
- 2012 *6th International Conference on Stochastic Analysis and its Applications*
Bedlewo, Poland (contributed talk)
- 2011 *5th International Conference on Stochastic Analysis and its Applications*
Bonn, Germany (invited speaker)
- 2010 *Nonlocal operators and partial differential equations*
Będlewo, Poland (contributed talk)
- 2010 *11th Conference on Probability*
Będlewo, Poland (contributed talk)
- 2009 *28th International Seminar on Stability Problems in Stochastic Models*
Zakopane, Poland (contributed talk)
- 2009 *Workshop on Schrödinger Operators and Stochastic Processes*
Wrocław, Poland (talk)
- 2009 *Workshop on Jump Processes*, Dresden, Germany (talk)