

Curriculum Vitae

EVELINA SHAMAROVA

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Mathematics Department,
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Citizenship: Portugal/Russia



ACADEMIC POSITIONS

- (08.06.2015 – current), Assistant professor (Professora adjunta) at the Mathematics department of Federal University of Paraíba, João Pessoa, Brazil.
- (04.10.2014 – 07.06.2015), Visiting professor at the Mathematics department of Federal University of Paraíba, João Pessoa, Brazil.
- (01.07.2009 – 30.06.2014), Faculty researcher (Ciência 2008 5-year contract) at the Mathematics Center of the University of Porto, Portugal.
- (01.09.2007 – 30.06.2009), Post-Doc at Mathematical Physics group of the University of Lisbon, Portugal.
- (01.04 – 31.08.2007), Post-Doc at Financial and Actuarial Mathematics research group at Vienna University of Technology, Vienna, Austria.

ACADEMIC DEGREES

- (20.05.2005), **Ph.D. in mathematics**, Lomonosov Moscow State University, Faculty of Mechanics and Mathematics, Department of Theory of Functions and Functional Analysis, Moscow, Russia.
 - Specializations: Infinite dimensional analysis, Functional analysis, Stochastic Analysis

- Dissertation: Surface measures and the Stokes formula in locally convex spaces
- Supervisor: Professor O. G. Smolyanov
- (2003), **Master's degree in mathematics (Dipl.-Math)**, University of Kaiserslautern, Mathematics Department, Germany
 - Grade: 1.0 (highest)
 - Major subject: Stochastic Analysis
 - Thesis: Some problems related to stochastic differential equations
- (1999), **Master's degree in mathematics**, Lomonosov Moscow State University, Faculty of Mechanics and Mathematics, Moscow, Russia
 - Grade: Excellent (highest, with honor)
 - Major subject: Functional analysis
 - Thesis: On surface measures in locally convex spaces
- (1997), **Master's degree in physics and computer science**, Moscow Institute of Physics and Technology (known as MIPT, MFTI, PhysTech), Faculty Of Applied Mathematics and Control Theory. Moscow, Russia.
 - Major subject: Computer modeling in physics

EDUCATION / ACADEMIC PREPARATION

- (2000–2003), Ph.D. studies, Lomonosov Moscow State University, Faculty of Mechanics and Mathematics, Moscow, Russia
- (2000–2003), Master's studies, Mathematics department, University of Kaiserslautern, Germany
- (1994–1999), Master's studies, Faculty of Mechanics and Mathematics, Lomonosov Moscow State University, Russia
- (1991–1997), Master's studies, Department of Applied Mathematics and Control theory at Moscow Institute of Physics and Technology

TEACHING

- (2020) Vector calculus and analytic geometry, undergraduate course (in Portuguese)
- (2020) Introduction to linear algebra, undergraduate course (in Portuguese)
- (2019) Ordinary differential equations, undergraduate course (in Portuguese)

- (2019) Introduction to functional analysis, postgraduate course (in Portuguese)
- (2018–2019) Calculus II, undergraduate course (in Portuguese)
- (2016–2018) Measure and integration, postgraduate course (in Portuguese)
- (2016–) Calculus I, undergraduate course (in Portuguese)
- (2015–2019) Series and ordinary differential equations, undergraduate course (in Portuguese)
- (11.2014–2017) Calculus III, undergraduate course (in Portuguese)
- (02.2010–07.2010) & (09.2011–12.2011) Stochastic processes, postgraduate course (in English)
- (2002–2003), Calculus II, tutorials (in German)
- (2003), Physics, for external students (in German)
- (2000–2001), Member of the admission committee for entrance examinations at Lomonosov Moscow State University, Faculty of Mechanics and Mathematics

PH.D. SUPERVISION

- (2011 & 2015–2018) Rui Sá Pereira, “Forward-backward Stochastic Differential Equations and Applications”, Mathematics department, University of Porto, Portugal (Supervision)
- (2017–2019) Jorge de Nascimento, “Hörmander theorem for fractional Brownian motion in a Hilbert space”, Mathematics department, Federal University of Paraíba, Brazil (Co-supervision)

PUBLICATIONS AND PREPRINTS

• PUBLICATIONS

- Yu. Gliklikh and E. Shamarova, Burgers equation in the adhesion model, *Applicable Analysis*, **2020**, [arXiv:1911.04515](https://arxiv.org/abs/1911.04515)
- E. Shamarova and R. Sá Pereira, Forward-backward SDEs with jumps and classical solutions to nonlocal quasilinear parabolic PDEs, *Stochastic processes and their applications*, vol. 130, issue 7, pp. 3865–3894 **2020**, [arXiv:1608.03584](https://arxiv.org/abs/1608.03584),
- C. Olivera and E. Shamarova, Gaussian density estimates for solutions of fully coupled forward-backward SDEs, *Mathematische Nachrichten*, **2020**. [arXiv:1807.11448](https://arxiv.org/abs/1807.11448)

- A. Ohashi and E. Shamarova, Classical solution to a multidimensional stochastic Burgers equation via forward-backward SDEs, *Global and stochastic analysis*, Vol. 6, No 2, pp. 79–103, **2019**, [arXiv:1602.06268](https://arxiv.org/abs/1602.06268),
- E. Shamarova, R. Chertovskih, A. F. Ramos, and P. Aguiar, Backward stochastic differential equation approach to modeling of gene expression, *Physical Review E*, v. 95, p. 032418, **2017**, [arXiv:1308.6619](https://arxiv.org/abs/1308.6619),
- E. Shamarova and A.B. Simas, Uniform approximation of the heat kernel on a manifold, *Archiv der Mathematik*, v. 108, pp. 485–494, **2017**, [arXiv:math/0701281](https://arxiv.org/abs/math/0701281),
- A. Ohashi, E. Shamarova, and N. Shamarov, Path-dependent Itô formulas under finite (p,q)-variation regularity, *ALEA*, Vol. XIII, 1–31, **2016**, [arXiv:1505.00879](https://arxiv.org/abs/1505.00879)
- E. Shamarova and N. Shamarov, Differential forms on locally convex spaces and the Stokes formula, *Russian Mathematics – Springer*, Vol. 60, issue 8, pp. 74–85, **2016**
- G. Amosov, M. Kpekpasi, N. N. Shamarov, and E. Shamarova, Antisymmetric Fock space and Grassmann algebras with unitary Fourier supertransform, *Transactions of the conference “Quantum dynamics and functional integrals”*, Keldysh Institute of applied mathematics, pp 67–74, Moscow, **2016**
- E. Shamarova and R. S. Pereira, Forward-Backward SDEs driven by Lévy Processes and Application to Option Pricing, *Global and Stochastic Analysis: An International Journal (GSA)*, No. 1, 113–132, **2015**, [arXiv:1203.5546](https://arxiv.org/abs/1203.5546)
- E. Shamarova, A version of the Malliavin–Hörmander’s theorem in 2-smooth Banach spaces, *Infinite dimensional analysis, quantum probability, and related topics*, Vol. 11, issue 1, **2014**, [arXiv:1304.3688](https://arxiv.org/abs/1304.3688),
- W. Polasek and E. Shamarova, Numerical Solution of Stochastic Differential Equations with Jumps in Finance by Eckhard Platen, Nicola Bruti-Liberati, *International Statistical Review*, v. 81, p. 311–313, **2013**.
- E. Shamarova, Chernoff’s theorem for backward propagators and applications to diffusions on manifolds, *Operators and Matrices*, Vol. 5, No. 4, 619-632, **2011**, [arXiv:1001.3373](https://arxiv.org/abs/1001.3373)
- A.B. Cruzeiro and E. Shamarova, On a forward-backward stochastic system associated to the Burgers equation, *Stochastic Analysis with Financial Applications (A. Kohatsu-Higa, N. Privault, S.J. Sheu, eds.)*, *Progress in Probability*, Birkhäuser Verlag, Vol. 65, 43-59, **2011**, [arXiv: 1001.3367](https://arxiv.org/abs/1001.3367)
- A.B. Cruzeiro and E. Shamarova, Navier–Stokes equations and forward-backward SDEs on the group of diffeomorphisms of a torus, *Stochastic Processes and their Applications*, Vol. 119, Issue 12, 4034-4060, **2009**, [arXiv:0807.0421](https://arxiv.org/abs/0807.0421)
- E. Shamarova, A mathematical approach to Jarzynski’s identity in nonequilibrium statistical mechanics, *Infinite dimensional analysis, quantum probability and related topics*, Vol. 12, No. 2, 213–229, **2009**, [arXiv:math/0701360](https://arxiv.org/abs/math/0701360)

- E. Shamarova, Constructing a Brownian sheet with values in a compact Riemannian manifold, *Math. Notes* 76, No. 4, 590–596, **2004**
- E. Shamarova, [Approximation of surface measures in a locally convex space](#), *Math. Notes* 72, No. 4, 551–568, **2002**
- SUBMITTED MANUSCRIPTS
 - R. Chertovskih and E. Shamarova, Gaussian-type density bounds for solutions of multidimensional backward SDEs and application to gene expression, [arXiv:2002.11706](#), **2019**
 - E. Shamarova and R. Sá Pereira, Hedging in a market with jumps – an FBSDE approach, [arXiv:1309.2211](#), **2018**
 - Andréa V. Rocha, Evelina Shamarova, Alexandre B. Simas, Improved residuals for linear regression models under heteroskedasticity of unknown form, [arXiv:1607.07926](#), **2017**
- [LINK TO MY ARTICLES ON ARXIV](#)

CONTRIBUTIONS AT CONFERENCES AND INVITED SEMINAR TALKS

- [Workshop in Stochastic Analysis and Applications](#), IMECC, Unicamp, Campinas, Brazil, August 10–11, **2019** (invited)
- [Infinite-dimensional analysis and mathematical physics](#), Lomonosov Moscow State University, Moscow, Russia, Jan 28 - Feb 1, **2019** (invited)
- *Workshop in Stochastic Analysis and Applications – ICM 2018 Satellite Meeting*, IMECC, Unicamp, Campinas, Brazil, August 13–15, **2018** (invited)
- Invited seminar talk at the Mathematics institute of the Federal University of Rio de Janeiro, June 18–20, **2018**
- [Mini-Workshop in Stochastic Partial Differential Equations](#), IMECC, Unicamp, Campinas, Brazil, February 27–28, **2018** (invited)
- [Brazilian school of Probability](#), IMPA, Rio de Janeiro, Brazil, July 31 – August 4, **2017** (contributed talk)
- [IV Encontro da Pós-Graduação em Matemática da UFBA](#), Federal University of Bahia, Salvador, Brazil, November 21–25, **2016** (invited)
- *Workshop in Stochastic Analysis*, IMECC, Unicamp, Campinas, Brazil, June 28–30, **2016** (invited)

- [Two days in stochastic analysis II](#), IMECC, Unicamp, Campinas, Brazil, August 12–13, **2013** (invited)
- *Advanced Finance and Stochastics*, Moscow, Russia, June 24 – 28, **2013** (contributed talk)
- *1st Portuguese meeting on Mathematics for Industry*, Porto, Portugal, June 6 – 8, **2013** (contributed talk)
- [Modern Stochastics: Theory and applications III](#), Kiev, Ukraine, September 10 – 14, **2012** (contributed talk)
- [Brazilian school of probability](#), Recife, Brazil, August 6 – 11, **2012** (contributed talk)
- *4th Porto Meeting on Mathematics for Industry*, Porto, Portugal, June 7–9, **2012** (contributed talk)
- *Integral and differential operators and their applications*, (June 30 - July 2) Aveiro, Portugal, **2011** (contributed talk)
- *5th International Conference on Stochastic Analysis and its Applications*, (September 5-9) Bonn, Germany, **2011** (contributed talk)
- *8th International Conference on Function Spaces, Differential Operators, Nonlinear Analysis*, (September 18-24) Tabarz/Thür., Germany, **2011** (contributed talk)
- *Modern Stochastic: Theory and Applications II* (September 7–11), Kiev, Ukraine, **2010** (invited)
- *International Congress of Mathematicians* (August 19–27), Hyderabad, India, **2010** (contributed talk)
- *ICM Satellite Conference on Probability and Stochastic Processes* (August 13–17), Bangalore, India, **2010** (contributed talk)
- Invited seminar talk at the Mittag-Leffler seminar, Mittag-Leffler institute, Djursholm, Sweden, Jan 21, **2010**
- *East Midlands Stochastic Analysis Seminar*, University of Warwick, Coventry, UK, August 21, **2009** (invited)
- *International Congress on Mathematical Physics* (August 3–8) and *Young Researcher Symposium* (July 31 – August 1), international conference, Prague, Czech Republic, July 31 – August 8, **2009** (contributed talk + poster)

- *Stochastic Processes and their Applications*, international conference, Berlin, Germany, July 27–31, **2009** (contributed talk)
- *Stochastic Analysis and Random Dynamical Systems*, international conference, Lvov, Ukraine, June 14–20, **2009** (contributed talk)
- *The Second Najman Conference on Spectral Problems for Operators and Matrices*, international conference, Dubrovnik, Croatia, May 10–17, **2009** (contributed talk)
- *GOCPs 2008 – 8th German Open Conference on Probability and Statistics*, Aachen, Germany, March **2008** (contributed talk)
- *Skorokhod Space. 50 Years On*, international conference, Kiev, Ukraine, June **2007** (contributed talk)
- *International Congress of Mathematicians Madrid 2006*, Madrid, Spain, August **2006** (contributed talk)
- *31st Conference on Stochastic Processes and their Applications* international conference, Paris, France, July **2006** (poster)
- German open conference on probability and statistics, Frankfurt, Germany, February **2006** (contributed talk)

GRANTS AND SCHOLARSHIPS

- (15.01.2010 – 15.03.2010) & (01.06.2010 – 15.06.2010) Post-doctoral research grant at the Mittag-Leffler institute
- (09.2007 – 06.2009), Portuguese Foundation for Science and Technology (FCT) post-doctoral research grant (University of Lisbon)
- (03.2007 – 08.2007), Austrian Science Fund (FWF) post-doctoral research grant (Vienna University of Technology)
- (10.2006–02.2007), Erwin Schrödinger Institute for Mathematical Physics (ESI) research grant
- (04.2003–03.2006), German Research Foundation (DFG) project grant (University of Kaiserslautern)
- (2000–2002), Mathematics International Master's program scholarship at the University of Kaiserslautern
- (1999–2002), Ph.D. scholarship at Lomonosov Moscow State University

- (1994–1999), Student scholarship at Lomonosov Moscow State University
- (1991–1997) Student scholarship at Moscow Institute of Physics and Technology

LANGUAGES

- English (fluent)
- Portuguese (fluent)
- German (used to be fluent)
- Russian (mother tongue)

INTERESTS

Marathon running