Curriculum Vitae
Mladen Savov

Basic and Contact Details

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Education

2005 - 2008	DPhil in Probability, University of Manchester, UK thesis: "Small time behaviour of L´evy processes" supervisor: Prof. R. Doney
2000 - 2004	first class BSc Applied Mathematics, Sofia University, Bulgaria

Academic Career

2021 -	corresponding member of the Bulgarian Academy of Sciences
2020-	professor, Sofia University and Bulgarian Academy of Sciences
2015 - 2017	Marie Sklodowska-Curie Individiual Fellow, Bulgarian Academy of Sciences
2014 - 2020	associate professor, Bulgarian Academy of Sciences
2012 - 2014	lecturer in Probability and Statistics, University of Reading, UK
2009 - 2012	Esmee Fairbairn Junior Research Fellow in Mathematics, New College, Oxford
2008 - 2009	postdoc, University Pierre and Marie Curie, Paris, France

Research Interests

Lévy processes and self-similar Markov processes; Special functions; Spectral theory of Markov semigroups; Anomalous diffusions; Financial and insurance mathematics and applications of stochastics in other fields of science.

Awards, Grants and Scholarships

2021	scientific achievement of the Institute of Mathematics and Informatics, Bulgarian Academy of Sciences
2015 - 2017	Marie Sklodowska-Curie Individual Fellowship, project MOCT Institute of Mathematics and Informatics, Bulgarian Academy of Sciences and University of Vienna funded by EU Horizon 2020 research and innovation scheme Marie Sklodowska-Curie Actions, H2020-MSCA-IF-2014 topic: "Spectral Theory of Non-Selfadjoint Markov Processes with Applications in Self-Similarity, Branching Processes and Financial Mathematics"
2016	scientific achievement of the Institute of Mathematics and Informatics, Bulgarian Academy of Sciences
2009 - 2012	Esmee Fairbairn Junior Research Fellowship, at New College, Oxford topic: "Small time behaviour of L´evy processes"
2012	grant from FNRS subsidy pour Mission Scientifique for a visit to ULB, Brussels
2011	grant from "Fondation Phillipe Wiener-Maurice Aanspach" for a visit to ULB, Brussels
2011	UK Scopus Young Researcher Award 2011 – Mathematics
2005 - 2008	Overseas Research Scholarship for my PhD studies, UK
2007	Faculty of Engineering and Physical Sciences' Postgraduate Student of the Year, University of Manchester, UK

Participation in International and National Projects

2019	scientific work, "Centre for Excellence in Informatics and Information and Communication Technologies", Institute of Information and Communication Technologies, Bulgarian Academy of Sciences (4 months)
2015	research position, project ACOMIN Institute of Information and Communication Technologies, Bulgarian Academy of Sciences (6 months) funded by EU FP7
2015 - 2017	scientific work in a national project funded by FNI, Bulgaria; topic: "Novel mathematical and statistical methods for machine learning with applications in the modern gene-sequencing technologies"
2021	supervisor of H.Sariev's and M.Minchev's projects funded by Young Scientists and Postdocs National Research Programme, FNI, Bulgaria

Supervision of PhD students

2020 -   supervising the PhD studies of Martin Minchev , Sofia Univeristy

2015 - 2019   supervised the PhD studies of Adam Barker, University of Reading, UK

Jury member for PhD defences

2021   Reker, J., University of Ulm, Germany

2015   Fan, Y., Australian National University, Australia

2014   Bartholomé, C., Université Libre de Bruxelles, Belgium

Commission of Trust

Refereeing   More than 70 referee reports for: Annals of Probability; Transactions of the American Mathematical Society; Annals of Applied Probability: Journal of Mathematical Analysis and Applications; Electronic Journal of Probability; Electronic Communications in Probability; Bernoulli; Stochastic Processes and their Applications; Annales de l'Institut Henri Poincar´e; Journal of Theoretical Probability; ESAIM: Probability and Statistics; Serdika Mathematical Journal; Fractional Calculus and Applied Analysis; Chaos, Fractals and Solutions; Comptes rendus de l'Academie bulgare des Sciences; Nonlinearity; Journal of Applied Statistics; BG-SIAM; Journal of Applied Probability; Journal of Mathematical Analysis; BG-SIAM

2018 -   associate editor for Serdika Mathematical Journal

2020   scientific editor for the book "Probabilities for p-outside values and heavy tails" by associate professor Pavlina Yordanova

Papers and Monographs

37. Patie, P. and Savov, M. (2021) "Spectral expansions for generalized Laguerre semigroups", Memoirs of American Mathematical Society, 272, No. 1336, 1−183, IF: 2.773

36. Alili, L., Bartholome, C., Chaumont, L., Patie, P. Savov, M. and Vakeroudis, S. (2021) "On Doney's factorization of the arc-sine law.", Progress in probability, 78, 43−58

35. Palejev, D. and Savov, M. (2021) "Estimating the Statistical Power of the Benjamini-Hochberg Procedure", Studies in computational intelligence, 9, No. 17, 1−19

34. Palejev, D. and Savov, M. (2021) "On the convergence of the Benjamini-Hochberg procedure", Mathematics, 9, No. 17, 1−19, IF: 2.258

33. Barker, A. and Savov, M. (2021) "Bivariate Bernstein-Gamma functions and moments of exponential functionals of subordinators ", Stochastic Processes and their Applications, 131, 454−497, IF: 1.414

32. Kolb, M and Savov, M.(2020) "A characterization of the finiteness of perpetual integrals of L´evy processes", Bernoulli, 26, No. 2, 1453–1472, IF: 1.393

31. Savov,M. and Toaldo, B. (2020) "Semi-Markov processes, integro-differential equations and anomalous diffusion-aggregation", Ann. Inst. H. Poincar´e Probab. Statist., 56, No.4, 2640–2671, IF: 1.25

30. Dimov, I. and Savov,M. (2020) "Probabilistic analysis of the single particle Wigner Monte-Carlo method", Mathematics and Computers in Simulation, 173, 32–50, IF: 1.409

29. Mutafchiev, L. and Savov,M. (2020)"On the Maximal Multiplicity of Block Sizes in a Random Set Partition", Random Structures and Algorithms, 56, 867-891, IF: 1.008

28. Zaevski, T.S., Kounchev, O. and Savov,M. (2019)"Two frameworks for pricing defaultable derivatives", Chaos, Solitons and Fractals, 123, 309–319, IF: 3.064

27. Loeffen, R., Patie, P. and Savov,M. (2019)"Extinction Time of Non-Markovian Self-Similar Processes, Persistence, Annihilation of Jumps and the Fr´echet Distribution", Journal of Statistical Physics, 175, No.5, 1022–1041, IF: 1.51

26. Patie, P., Savov, M. and Zhao, Y. (2019)"Intertwining, Excursion Theory and Krein Theory of Strings for Non-self-adjoint Markov Semigroups", Annals of Probability, 47 No.5, 3231–3277, IF: 2.05

25. Patie, P. and Savov,M. (2018) "Bernstein-gamma functions and exponential functionals of L´evy processes", Electronic Journal of Probability, 23, 1–101, IF: 0.994

24. Patie, P. and Savov,M. (2017) "Cauchy problem of the non-self-adjoint Gauss-Laguerre semigroups and uniform bounds of generalized Laguerre polynomials", Journal of Spectral Theory, 7, No.3, 797–846, IF: 1.21

23. Kolb, M and Savov, M. (2017) "Conditional survival distributions of Brownian trajectories in a one dimensional Poissonian environment in the critical case", Electron. J. of Probab., 22, No:14, 1–22, IF:0.95

22. Kolb, M. and Savov, M. (2016) "Transience and recurrence of a Brownian path with limited local time", Annals of Probability, 44, No. 6, 4083–4132, IF: 1.79

21. Savov, M. and Wang, S.(2015) "Fluctuation limits of a locally regulated population and generalized Langevin equations", Infin. Dimens. Anal. Quantum Probab. Relat. Top., 18, No. 02, 27 pages, DOI: 10.1142/S0219025715500095, IF: 0.65

20. Savov, M. (2014) "On the range of subordinators", Electron. Commun. Probab., 19, No: 84, 1–10, IF: 0.630

19. Aurzada, F., Kramm, T. and Savov, M. (2014) "First passage times of L´evy processes over a one-sided moving boundary", Markov Process and Related Fields, 21, No.1, 1–38, IF: 0.357

18. Kolb, M. and Savov, M. (2014) "Exponential ergodicity of killed completely asymmetric L´evy processes in a finite interval", Electron. Commun. Probab. 14, No.1, 1–9, DOI: 10.1214/ECP.v19-3006, ISSN: 1083-589X, IF: 0.6

17. Patie, P. and Savov, M. (2013) "Exponential functional of L´evy processes: Generalized Weierstrass products and Wiener−Hopf factorization", Comptes Rendus Mathematique 351, No.9-10, 393–396, IF: 0.477

16. Aurzada, F., Doering, L. and Savov, M. (2013) "Chung LIL for L´evy processes at small times", Bernoulli 19, No.1, 115–136, IF: 0.94

15. Kolb, M., Savov, M. and W¨ubcker, A. (2013) "Geometric ergodicity of a hypoelliptic diffusion modelling the melt-spinning process of nonwoven materials", SIAM J. Math. Anal. 45 No.1, 1–13, IF: 1.573

14. Patie, P. and Savov, M. (2012) "Extended factorizations of exponential functionals of L´evy processes", Electron. J. of Probab. 17, No.38, 1–22, IF: 0.785

13. Pardo, J.C., Patie, P. and Savov, M. (2012) "A Wiener-Hopf type of factorization for the exponential functional of L´evy processes", J. of London Math. Soc. 96 (2), 930–956, IF: 0.80

12. Kuznetsov A., Pardo J.C. and Savov, M. (2012) "Distributional properties of exponential functionals of L´evy processes", Electron. J. of Probab. 17, No.8, 1–35, IF: 0.785

11. Doering, L. and Savov, M. (2011) "(Non) Differentiability and asymptotics for renewal densities of subordinators", Electron. J. of Probab. 16, No.17, 470–503, IF: 0.790

10. Chan, T., Kyprianou A. and Savov, M. (2011) "Smoothness of scale functions for spectrally negative L´evy processes", Probab. Theory and Related Fields 150, 691–708, IF: 1.53

9. Savov, M. and Winkel, M. (2010) "Right inverses of Levy processes: the excursion measure in the general case", Electron. Comm. in Probab. 38, No. 15, 572–584, IF: 0.52

8. Savov, M. (2010) "Small time one-sided LIL behaviour for L´evy processes at zero", J. Of Theoret. Probab. 23, No.1, 209–236, IF: 0.60

7. Bertoin, J. and Savov, M. (2010) "Some applications of duality for L´evy processes in a halfline", Bull. of London Math. Soc. 43, 97–111, IF: 0.630

6. Doering, L. and Savov, M. (2010) "Application of renewal theorems to exponential moments of local times", Electron. Comm. in Probab. 38, No.15, 263–269, IF: 0.560

5. Doney, R. and Savov, M. (2010) "Right inverses of L´evy processes", Ann. of Probab. 38, No.4, 1390–1400, IF: 1.470

4. Doney, R. and Savov, M. (2010) "The asymptotic behavior of densities related to the supremum of a stable process", Ann. of Probab. 38, No.1, 316–326, IF: 1.470

3. Doney, R., Maller, R. and Savov, M. (2009) "Renewal theorems and stability for the reflected process", Stochastic Process. Appl. 119, No.4 , 1270–1297, IF: 1.540

2. Savov, M. (2009) "Small time two-sided LIL behavior for L´evy processes at zero", Probab. Theory and Related Fields 144, No.1-2, 79–98, IF: 1.390

1. Savov, M. (2008) "Curve crossing for the reflected L´evy process at zero and infinity", Electron. J. of Probab. 13, No.7, 157–172, IF: 1.13

Citations

Google scholar: 662 citations with h index 17

Scopus: 347 citations with h index 11; without self-citations of any type 237 citations with h index 8

Web of Science: 268 citations with h index 10

Plenary Talks

2021   "Bernstein-gamma functions in the theory of stochastic processes and beyond", Mathematics Days in Sofia, Sofia, Bulgaria - postponed due to COVID-19

2018   "Fractional diffusion of variable order and anomalous aggregation phenomenon", Workshop of North Rheine-Westphalia on Stochastic processes, Paderborn, Germany

2016   "Bernstein-Gamma functions and their applications in probability theory", 17th International Summer Conference on Probability and Statistics ISCPS'16, Pomorie, Bulgaria

2015   "The spectral theory of generalized Laguerre semigroups and its applications to positive self-similar Markov processes", International Congress of Mathematics MICOM-2015, Athens, Greece

2015   "The spectral theory of generalized Laguerre semigroups and its applications to positive self-similar Markov processes", Adventures in Self-Similarity, Cornell, USA

2015   "Recent developments in exponential functionals of Lévy processes", 44 Spring Conference of the Society of Bulgarian Mathematicians, Camchia, Bulgaria

2015   "Some thoughts on spectral theory of non-self-adjoint Markov processes with emphasis on the class of Laguerre semigroups.", Belgium Luxemburgh seminar in probability, Liege, Belgium

Invited Talks

2022   "Bivariate Bernstein-Gamma functions and asymptotic behaviour of exponential functionals on deterministic horizon", Lévy processes and random walks, A workshop in celebration of Ron Doney's 80th birthday, Manchester, UK

2022   "Asymptotics of densities of exponential functionals of subordinators", 10th International conference on Lévy processes, Mannheim, Germany

2022   "Asymptotics of densities of exponential functionals of subordinators", Branching and Persistence, Angers, France

2022   "Fractional diffusion of variable order and anomalous aggregation phenomenon", Deterministic and stochastic fractional differential equations and jump processes, Newton Institute, Cambridge, UK

2020	"A Characterization of the Finiteness of Perpetual Integrals of L´evy Processes", Stochastic Processes under Constraints, Oberwolfach, Germany
2018	"Fractional diffusion of variable order and anomalous aggregation phenomenon", International Summer Conference on Probability and Statistics, Pomorie, Bulgaria
2017	"Bernstein-Gamma functions and exponential functionals of L´evy processes", Workshop on L´evy processes and time series: in honour of Peter Brockwell and Ross Maller, Ulm, Germany
2016	"Bernstein-Gamma functions and exponential functionals of L´evy processes", 4th Workshop on Fractional Calculus, Probability and Non-Local Operators: Applications and Recent Developments FCPNLO 2016, Bilbao, Spain
2016	"Bernstein-Gamma functions and exponential functionals of L´evy processes", 8th International Conference on L´evy processes, Angers, France
2016	"Transience and recurrence of a Brownian path with limited local time", Stochastic processes under constraints, Augsburg, Germany
2014	"Brownian motion with limited local time", Persistence probabilities and related fields, Darmstadt, Germany
2013	"Some spectral properties for a class of non-self-adjoint operators related to Markov processes", From Spectral Gaps to Particle Filters, Reading, UK
2013	"Some spectral problems associated to non-self-adjoint selfsimilar semigroups", 7th International Conference on L´evy Processes, Wroclaw, Poland
2012	"Eigenvalue expansions of invariant Feller-Lamperti semigroups generated by non-local, non-selfadjoint operators via intertwining approach", Workshop on L´evy processes and Their Applications, University of Zurich, Switzerland
2012	"L´evy perpetuities", Workshop IPAS, Brussels, Belgium
2011	"Exponential functionals of L´evy processes", Conference on Self-Similarity and Related Fields, Le Touquet, France
2011	"Exponential functionals of L´evy processes", 35th Conference on Stochastic Processes and their applications, Oaxaca, Mexico
2010	"Exponential functionals of L´evy processes", Workshop on L´evy processes and Their Applications, University of Zurich, Switzerland
2010	"Lamperti representation of self-similar Markov processes", 6th International Conference on L´evy Processes, Dresden, Germany
2009	"Right Inverses of L´evy processes", 34th Conference on Stochastic Processes and their applications, Berlin, Germany
2008	"Laws of Iterated Logarithms for L´evy processes at small times", Workshop on Risk Modeling and High Frequency Data, Munich, Germany

Seminar Talks

2022	"Theory of Bernstein-Gamma functions and asymptotics of densities of exponential functionals of subordinators", Fractional differential equations, Newton Institute, Cambridge, UK
2019	"Spectral theory of non-selfadjoint Markov semigroups", Seminar in Optimization, University of Sofia, Bulgaria
2018	"Bernstein-Gamma functions and exponential functionals of L´evy processes", Probability Seminar of University of Bielefeld, Bielefeld, Germany
2017	"Bernstein-Gamma functions and exponential functionals of L´evy processes", Probability Seminar of University of Manchester, Manchester, UK
2017	"Bernstein-Gamma functions and exponential functionals of L´evy processes", University of Naples, Naples, Italy
2016	"Bernstein-Gamma functions and exponential functionals of L´evy processes", Vienna Seminar in Mathematical Finance and Probability, Vienna, Austria
2016	"Bernstein-Gamma functions and exponential functionals of L´evy processes", National Stochastics Seminar, BAS, Sofia, Bulgaria
2015	"Spectral theory of the generalized semigroups of Laguerre and some applications in the theory of the positive self-similar Markov processes", National Stochastics Seminar, BAS, Sofia, Bulgaria
2014	"Recent developments for exponential functionals and some possible implications for pricing Asian options", Vienna Seminar in Mathematical Finance and Probability, Vienna, Austria
2014	"Brownian motion with restricted local time at zero", National Stochastic Seminar, BAS, Sofia, Bulgaria
2013	"Spectral Expansions and Intertwining of Semigroups", London Mathematical Analysis Seminar, Imperial College, London, UK
2011	"Factorization of Exponential Functionals", Probability Seminar of Paris 6, Paris, France
2011	"Factorizations of Exponential Functionals", Probability Seminar of Fields Institute, Toronto, Canada
2010	"Some Results on Box Dimensions of Subordinators", CIMAT Probability Seminar, Guanajuato, Mexico
2010	"Some Results on Box Dimensions of Subordinators", UNAM Probability Seminar, Mexico city, Mexico
2010	"Some Applications of Duality for L´evy Processes in a Half-line", Stochastic Analysis Seminar, Oxford, UK
2010	"Some Applications of Duality for L´evy Processes in a Half-line", ULB Seminar Meeting, Brussels, Belgium

2010	"Right Inverses of L´evy Processes", Seminar meeting, Oxford, UK
2010	"Right Inverses of L´evy Processes", Seminar meeting, Braunschweig, Germany
2009	"Right Inverses of L´evy Processes", Seminar meeting, Bath, UK
2008	"Laws of Iterated Logarithms for L´evy processes at Small Times", Probability Seminar of Paris 6, Paris, France
2008	"Laws of Iterated Logarithms for L´evy processes at Small Times", Seminar Meeting, TU-Vienna, Austria
2008	"Laws of Iterated Logarithms for L´evy processes at Small Times", EURANDOM, Eindhoven, Netherlands

Institutional Roles

2016 -	member of the scientific council, Institute of Mathematics and Informatics, Bulgarian Academy of Sciences
2020 - 2021	vice-chair of the programme committee of the "50th conference of the Union of the Bulgarian Mathematicians", Burgas, Bulgaria
2016 - 2017	member of the programme committee of the conference "Mathematical Days of Sofia", Bulgaria
2013	co-organizer of the workshop "From spectral gaps to particle filters", University of Reading, funded by the London Mathematical Society

Membership in scientific organizations

2019 -	member of Marie Curie Alumni Association
2015 -	Visiting Fellow of University of Reading, UK

Public Activities

2020-	head of the Bulgarian Statistical Society
2016 - 2020	vice-head of the Bulgarian Statistical Society
2017 -	creator and administrator of a social media group on math topics - *„События и теми по вероятности и математика"*
2016 -	participant in science communication events such as European Researchers' Night 2020, Sofia, Bulgaria; Summer Research School in Mathematics and Informatics 2016, Blagoevgrad, Bulgaria; and school and student workshop visits

August 22, 2022