International Conference
"Stochastic Processes and Algebraic Structures" - From Theory Towards Applications
SPAS2017

Västerås -- Stockholm, 4-6 October, 2017

4 October 2017 — Västerås, Mälardalen University

TIME/ROOM	House U, Room Beta
8:00 − 9:45	Registration
9:45 − 10:00	**Opening session**
10:00 − 10:30	Documentary Film
10:30 − 10:35	Break
10:35 − 11:05	**Dmitrii Silvestrov** Stockholm University & Mälardalen University, Sweden *Nonlinearly Perturbed Stochastic Processes and Systems*
11:05 − 11:10	Break
11:10 − 11:40	**Raimondo Manca** University "La Sapienza" of Rome, Roma, Italy *The Calculation of Pure Premium for Health Insurance by Non-Homogeneous Semi-Markov Reward Processes*
11:40 − 11:45	Break
11:45-12:15	**Christos H Skiadas** Technical University of Crete, Chania, Greece *A First Exit Time Modeling of Life Table Data Sets*
12:15 − 13:15	Lunch

TIME/ROOM	House U, Room Beta	TIME/ROOM	House U, Room Kappa
13:15 − 14:55	Communication Session SP&MS − 1 Chairs: D'Amico, G. (Italy) Faybishenko, B. (USA)	13:15 − 14:00	Poster Session EM&MI
		14:00 − 14:05	Break
		14:05 − 14:55	Communication Session EM&MI − 1 Chairs: Poljak, D. (Croatia) Rančić, M. (Sweden)
14:55 − 15:10	Coffee break	14:55 − 15:10	Coffee break
15:10 − 17:15	Communication Session SP&MS − 2 Chairs: Silvestrov, D. (Sweden) Engström, C. (Sweden)	15:10 − 17:15	Communication Session EM&MI − 2 Chairs: Rančić, M. (Sweden) Lundengård, K. (Sweden)
17:15 − 17:20	Break	17:15 − 17:20	Break
17:20 − 19:00	Communication Session SP&MS − 3 Chairs: Silvestrov, D. (Sweden) Engström, C. (Sweden)	17:20 − 19:00	Communication Session AS − 1 Chairs: Silvestrov, S. (Sweden) Richter, J. (Sweden)

5 October 2017 — Västerås, Mälardalen University

TIME/ROOM	House U, Room Beta	House U, Room Ypsilon
9:00 − 10:00	Registration	
10:00 − 10:30	**Sergei Silvestrov** Mälardalen University, Västerås, Sweden *Quasi-Lie Algebras and Hom-Algebra Structures*	
10:30 − 10:35	Break	
10:35 − 11:05	**Viktor Abramov** University of Tartu, Estonia *Matrix 3-Lie Superalgebras and their Applications to BRST-supersymmetry*	Communication Session SP&MS − 4 Chairs: Malyarenko, A. (Sweden) Ni, Y. (Sweden)
11:05 − 11:10	Break	
11:10 − 11:40	**Folkert Müller-Hoissen** Max Planck Institutef or Dynamics and Self-Organisation, Göttingen, Germany *Differential Calculi on Associative Algebras and Integrable Systems*	
11:40 − 11:45	Break	
11:45-12:15	**Vladimir Bavula** University of Sheffield, UK *The Algebras of Polynomial Integro-Differential Operators, their Ideals and Automorphisms*	
12:15 − 13:15	Lunch	

TIME/ROOM	House U, Room Beta	House U, Room Kappa
13:15 − 13:45	**Abdenacer Makhlouf** University of Haute Alsace, Mulhouse, France *Quantum deformations, Twistings and Hom-Type algebraic structures*	
13:45 − 13:50	Break	
13:50 − 14:20	**Johan Öinert** Blekinge Institute of Technology, Karlskrona, Sweden *Epsilon-Strongly Group Graded Rings, Leavitt Path Algebras and Crossed Products by Twisted Partial Actions*	Communication Session SP&MS − 5 Chairs: Malyarenko, A. (Sweden) Ni, Y. (Sweden)
14:20 − 14:25	Break	
14:25 − 14:55	**Patrik Nystedt** Department of Engineering Science, University West, Trollhättan, Sweden *Noncommutatively Graded Algebras*	
14:55 − 15:10	Coffee break	
15:10 − 17:15	Communication Session AS − 2 Chairs: Abramov, V. (Estonia) Silvestrov, S. (Sweden)	Communication Session SP&MS − 6 Chairs: Malyarenko, A. (Sweden) Ni, Y. (Sweden)
17:15 − 17:20	Break	
17:20 − 19:00	Communication Session AS − 3 Chairs: Zhdanovskiy, I. (Russia) Silvestrov, S. (Sweden)	Communication Session SP&MS − 7 Chairs: Silvestrov, D. (Sweden) Malyarenko, A. (Sweden)

6 October 2017 — Stockholm, Stockholm University

TIME/ROOM	Kräftriket, House 5, Room 14
9:30 − 10:00	Coffee
10:00 − 10:10	**Opening session**
10:10 − 10:40	**Mats Gyllenberg** University of Helsinki, Finland *The Renewal Equation of Population Dynamics*
10:40 − 10:45	Break
10:45 − 11:15	**Nikolaos Limnios** Sorbonne University, Université de technologie de Compiègne, France *Random Evolutions: Limit Theorems and Application in Statistics*
11:15 − 11:20	Break
11:20 − 11:50	**Ola Hössjer** Stockholm University, Sweden *On the Waiting Time until Fixation in Populations where Mutations Appear Sequentially*
11:50 − 11:55	Break
11:55 − 12:15	**Mikael Petersson** Statistics Sweden, Stockholm, Sweden *Interval Estimation of Extreme Proportions Under Stratified Random Sampling*
12:20 − 13:25	Lunch

TIME/ROOM	Kräftriket, House 5, Room 14
13:25 − 13:55	**Yuliya Mishura** Taras Shevchenko National University of Kyiv, Kyiv, Ukraine *Fractional Irregularity*
13:55 − 14:00	Break
14:00 − 14:30	**Anatoliy Malyarenko** Mälardalen University, Västerås, Sweden *Random Fields Related to the Symmetry Classes of Second-Order Symmetric Tensors*
14:30 − 14:35	Break
14:35 − 15:05	**Nikolai Leonenko** Cardiff University, UK *Fractional Pearson Diffusions*
15:05 − 15:40	Coffee break
15:40 − 16:10	**Peter Jagers** Chalmers and University of Gothenburg, Sweden *How Did the Population Start?*
16:10 − 16:15	Break
16:15 − 16:45	Documentary Film
16:45 − 16:50	Break
16:50 − 17:20	**Dmitrii Silvestrov** Stockholm University & Mälardalen University, Sweden *A Journey in the World of Stochastic Processes*
17:20 − 17:30	**Closing session**
18:30 −	Conference Dinner HAGA FORUM Stockholm

SP&MS track — Stochastic Processes, Mathematical Statistics and Applications
EM&MI track — Engineering Mathematics and Mathematics in Industry
AS track — Algebraic Structures

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Abstract title	List of authors	Authors' affiliations	Corrsponding author		
			First Name	**Last Name**	**Track***
Nonlinear Dynamics Simulations of Ecological Processes: Model, Diagnostic Parameters of Deterministic Chaos, and Sensitivity Analysis	Boris Faybishenko Fred Molz Deborah Agarwal	Lawrence Berkeley National Laboratory, Energy Geosciences Division, Berkeley, California, USA Clemson University, Environmental Engineering and Earth Sciences Dept., Anderson, South Carolina, USA Lawrence Berkeley National Laboratory, Computer Research Division, Berkeley, California, USA	Boris	Faybishenko	SP&MS 1.1
Nonlinearly Perturbed Birth-Death-Type Models	Dmitrii Silvestrov Mikael Petersson Ola Hössjer	Department of Mathematics, Stockholm University, Sweden Department for Development of Processes and Method, Statistics Sweden, Sweden Department of Mathematics, Stockholm University, Sweden	Dmitrii	Silvestrov	SP&MS 1.2
Financial volumes and their relation with returns and durations: a semi-Markov approach	Guglielmo D'Amico Filippo Petroni	University "G. d'Annunzio" of Chieti-Pescara, Italy University of Cagliari, Italy	Guglielmo	D'Amico	SP&MS 1.3
Skorohod Embedding and Shiryaev problem	Alexander Kreinin	Quantitative Research, IBM, Canada	Alexander	Kreinin	SP&MS 1.4
A comparison of different variations of PageRank and their influence on convergence.	Christopher Engström Sergei Silvestrov	Mälardalen University, Sweden Mälardalen University, Sweden	Christopher	Engström	SP&MS 2.1
Comparison-traditional PageRank, lazy PageRank and random walk with backstep for a line of nodes connected with complete graphs	Pitos Seleka Biganda Benard Abola Christopher Engström Sergei Silvestrov	University of Dar es Salaam, Tanzania Mälardalen University, Sweden	Pitos Seleka	Biganda	SP&MS 2.2
PageRank in evolving tree graphs	Benard Abola Pitos Seleka Biganda Christopher Engström Sergei Silvestrov	Mälardalen University, Sweden University of Dar es Salaam, Tanzania Mälardalen University, Sweden Mälardalen University, Sweden	Benard	Abola	SP&MS 2.3
Characterizing the Initial Phase of Epidemic Growth on Empirical Networks	Kristoffer Spricer Pieter Trapman	Department of Mathematics, Stockholm University, Sweden Department of Mathematics, Stockholm University, Sweden	Kristoffer	Spricer	SP&MS 2.4
An extension of Drosel-Schwable Forest-fire model on Bethe lattice	Arpan Bagchi Mariusz Białecki	Institute of Geophysics, Polish Academy of Science, Poland Institute of Geophysics, Polish Academy of Science, Poland	Arpan	Bagchi	SP&MS 2.5
Finding Equilibria for Time-Inconsistent Markovian Stopping Problems	Sören Christensen Kristoffer Lindensjö	Department of Mathematics, University of Hamburg Department of Mathematics, Stockholm University	Kristoffer	Lindensjö	SP&MS 3.1
Criteria for the Finiteness of the Strong p-Variation for Levy-type Processes	Martynas Manstavičius Alexander Schnurr	Vilnius University Universitat Siegen	Martynas	Manstavičius	SP&MS 3.2
Limit theorems for quadratic variations of the Lei-Nualart process	Salwa Bajja Khalifa Es-Sebaiy Lauri Viitasaari	National School of Applied Sciences - Marrakesh, Cadi Ayyad, University, Morocco Department of Mathematics and System Analysis, Aalto University School of Science, Finland	Khalifa	Es-Sebaiy	SP&MS 3.3
An exponential limit shape of random q-proportion Bulgarian solitaire	Kimmo Eriksson Markus Jonsson Jonas Sjöstrand	Mälardalen University, Sweden Mälardalen University, Sweden Royal Institute of Technology, Sweden	Markus	Jonsson	SP&MS 3.4
Simulation of Fractional Ornstein-Uhlenbeck of the Second Kind by Circulant Embedding Method	José Igor Morlanes Andriy Andreev	Department of Statistics, Stockholm University, Sweden	José Igor	Morlanes	SP&MS 3.5

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Pricing European Options under two-dimensional Black-Scholes Partial Differential Equation by using the Crank-Nicholson Finite Difference Method	Jean-Paul Murara Betuel Canhanga Anatoliy Malyarenko Ying Ni Sergei Silvestrov	Malardalen University, Sweden Eduardo Mondlane University, Mozambique Malardalen University, Sweden Malardalen University, Sweden Malardalen University, Sweden	Jean-Paul	Murara	SP&MS 4.1	
Lie Symmetries of the Black Scholes Type Equations in Financial Mathematics	Asaph Keikara Muhumuza Anatoliy Malyarenko Sergei Silvestrov	Mälardalen University, Västerås, Sweden Mälardalen University, Västerås, Sweden Mälardalen University, Västerås, Sweden	Asaph Keikara	Muhumuza	SP&MS 4.2	
Stochastic differential equations with generalized stochastic volatility	Meriem Bel Hadj Khlifa Yuliya Mishura Zili Mounir	Faculty of Sciences of Monastir, Department of Mathematics, Tunisia Taras Shevchenko National University of Kyiv, Ukraine Faculty of Sciences of Monastir, Department of Mathematics, Tunisia	Bel Hadj Khlifa	Meriem	SP&MS 4.3	
On the spatial variation for the solution to the stochastic wave equation driven by white noise	Marwa Khalil Ciprian A. Tudor Mounir Zili	University of Monastir, Tunisia Laboratoire Paul Painlevé, University of Lille, France	Marwa	Khalil	SP&MS 4.4	
Necessary and sufficient condition of optimality for stochastic linear switching systems with delay on control	Charkaz Aghayeva	Alparslan University, Mus, Turkey	Charkaz	Aghayeva	SP&MS 4.5	
On approximative placement of quantizers using their asymptotic distribution	Kalev Pärna	University of Tartu, Estonia	Kalev	Pärna	SP&MS 5.1	
Strong Limit Theorems for Superposition of Random Processes with Applications to Random Sums and Risk Model	Nadiia Zinchenko	Department of Informatics and Applied Mathematics, Nizhyn State Mukola Gogol University, Nizhyn, Ukraine	Nadiia	Zinchenko	SP&MS 5.2	
Homogeneous and isotropic planar tensor random fields of rank 2	Martin Ostoja-Starzewski Anatoliy Malyarenko	University of Illinois at Urbana-Champaign, USA Mälardalen University, Sweden	Martin	Ostoja-Starzewski	SP&MS 5.3	
Statistical Inference for Linear Fractional Stable Motion	Stepan Mazur Dmitry Otryakhin Mark Podolskij	Unit of Statistics, Örebro University, Sweden Department of Mathematics, Aarhus University, Denmark Department of Mathematics, Aarhus University, Denmark	Stepan	Mazur	SP&MS 5.4	
Discriminant analysis in small and large dimensions	Edward Ngailo Taras Bodnar Stepan Mazur Nestor Parolya	Stockholm University, Department of Mathematics, Sweden Stockholm University, Department of Mathematics, Sweden Orebro University, Sweden Leibniz University Hannover, Germany	Edward	Ngailo	SP&MS 6.1	
Exponential bounds for the ruin probability of non-homogeneous risk models	Jonas Šiaulys	Vilnius University, Faculty of Mathematics and Informatics	Jonas	Šiaulys	SP&MS 6.2	
Spatial Statistical Modeling of Insurance Risk	Oskar Tufvesson Johan Lindström Erik Lindström	Product & Price, BA Private, If P&C Insurance, Sweden Centre for Mathematical Sciences, Lund University, Sweden Centre for Mathematical Sciences, Lund University, Sweden	Oskar	Tuvfesson	SP&MS 6.3	
Modelling of mortality rates using power-exponential functions	Karl Lundengård Milica Rančić Sergei Silvestrov	Mälardalen University, Sweden Mälardalen University, Sweden Mälardalen University, Sweden	Karl	Lundengård	SP&MS 6.4	
On some challenges facing insurance underwriting	Alex Teterukovsky	Head of Industrial Product&Price, If P&C insurance, Sweden	Alex	Teterukovsky	SP&MS 6.5	

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Some a limit theorems for branching processes	Ya.M. Khusanbayev G. Rakhimov	Institute of Mathematics, Tashkent, Uzbekistan Academic Lyceum "International House - Tashkent"	G.	Rakhimov	SP&MS 7.1
On the convergence of nearly critical branching process with immigration to a deterministic process	Khusanbayev Yakubdjan Jumaqulov Hurshidjon	Institute of mathematics, Tashkent, Uzbekistan Institute of mathematics, Tashkent, Uzbekistan	Khusanbayev	Yakubdjan	SP&MS 7.2
Refinement of some limit results in theory of discrete time branching processes	Azam Imomov	Head spesialist in State Testing Centre, Uzbekistan	Azam	Imomov	SP&MS 7.3
A limit theorem for the branching process with interacting particles and immigration	J.B. Azimov	Institute of railway engineering, Uzbekistan	J.B.	Azimov	SP&MS 7.4
Application of limit theorems for superposition of random function to sequential estimations	Rakhimova Gulnoza Tursunov Gafur	Tashkent Auto-Road Institute, Uzbekistan National University of Uzbekistan, Uzbekistan	Gulnoza	Rakhimova	SP&MS 7.5

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Pseudo-determinants and traces on Banach algebras	Sten Kaijser	Department of Mathematics, Uppsala University, Sweden	Sten	Kaijser	AS1.1
Generalized Vandermonde determinants over quadratic surfaces	Karl Lundengård Jonas Österberg Sergei Silvestrov	Mälardalen University, Sweden Mälardalen University, Sweden Mälardalen University, Sweden	Jonas	Österberg	AS1.2
Monoid Ore extensions	Johan Richter	Mälardalen University, Sweden	Johan	Richter	AS1.3
Ore extensions for general functional algebras	Alex Behakanira Tumwesigye Johan Richter Sergei Silvestrov	Department of Mathematics, Makerere University, Uganda Division of Applied Mathematics, Mälardalen University, Sweden Division of Applied Mathematics, Mälardalen University, Sweden	Alex Behakanira	Tumwesigye	AS1.4
Hom-Lie algebras in Arithmetic Geometry	Daniel Larsson	University College oi Southeast Norway	Daniel	Larsson	AS2.1
Strong Hom-associativity	Lars Hellström	Mälardalen University, Sweden	Lars	Hellström	AS2.2
Aspects of Hom-algebras	Per Bäck Johan Richter Sergei Silvestrov	Mälardalen University, Sweden Mälardalen University, Sweden Mälardalen University, Sweden	Per	Bäck	AS2.3
Z_2-graded cubic matrices and their 3-Lie superalgebras	Viktor Abramov Priit Lätt	University of Tartu, Estonia University of Tartu, Estonia	Priit	Lätt	AS2.4
Reordering formulas and deformed difference operator representations of deformed Lie type commutation relations	John Musonda Sergei Silvestrov Johan Richter	Malardalen University, University of Zambia, Zambia Malardalen University, Sweden Malardalen University, Sweden	John	Musonda	AS2.5
Derivations in group algebras	Andronick A. Arutyunov	Moscow Institute of physics and Technologies	Andronick	Arutyunov	AS3.1
Family of Cartan subalgebras and projective geometry	Ilya Zhdanovskiy	MIPT (Moscow Institute of Physics and Technologies) HSE (Higher School of economics)	Ilya	Zhdanovskiy	AS3.2
Constructive Semigroups with Apartness: Foundations and (Possible) Applications	Melanija Mitrović Siniša Crvenković Branislav Ranđelović	University of Niš, Serbia University of Novi Sad, Serbia University of Niš, Serbia	Melanija	Mitrović	AS3.3
Invariant ring of Aut(V, H)	Fawad Hussain	Department of Mathematics, AUST, Pakistan	Dr. Fawad	Hussain	AS3.4
Coding Theory Based on Algebraic	Oznur Oztunc Kaymak	Balıkesir University, Turkey	Oznur	Oztunc Kaymak	AS3.5

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On Pade approximants series solutions of MHD flow equations with heat and mass transfer due to a point sink	I. M. Chandarki B. B. Singh	N B Navale Sinhgad College of Engineering, India Dr. Babasaheb Ambedkar Technological University, India	Imran	Chandarki	EM&MI 1.1
On the Mixed Type p-adic Ising l-model on the Cayley tree of Arbitrary Order	Mutlay Dogan Farrukh Mukhamedov Hasan Akin	Ishik University, Iraq The United Arab Emirates University, UAE Freelancer, Turkey	Mutlay	Dogan	EM&MI 1.2
Applications of Stochastic Collocation Method in Electromagnetic Compatibility	Dragan Poljak Silvestar Šesnić Anna Šušnjara Sebastien Lallechere Khalil El Khamlichi Drissi	University of Split, FESB, Split, Croatia University of Split, FESB, Split, Croatia University of Split, FESB, Split, Croatia Universite Clermont Auvergne, Pascal Institute, France Universite Clermont Auvergne, Pascal Institute, France	Dragan	Poljak	EM&MI 2.1
An Efficient Deterministic-Stochastic Model for the Homogeneous Human Brain Model Dosimetry: ANOVA Approaches for Sensitivity Analysis of Model Parameters	Anna Susnjara Mario Cvetkovic Dragan Poljak Sebastien Lallechere Khalil El Khamlichi Drissi	FESB, University of Split, Croatia Universite Clermont Auvergne, Pascal Institute, France	Anna	Susnjara	EM&MI 2.2
Stochastic Dosimetry Applied to Transcranial Magnetic Stimulation Analysis	Mario Cvetković Anna Šušnjara Dragan Poljak Sebastien Lallechere Khalil El Khamlichi Drissi	University of Split, FESB, Split, Croatia University of Split, FESB, Split, Croatia University of Split, FESB, Split, Croatia Universite Clermont Auvergne, Pascal Institute, France Universite Clermont Auvergne, Pascal Institute, France	Mario	Cvetković	EM&MI 2.3
Study of a nonlinear problem from geology	Ngonn Seam	Department of Mathematics, Royal University of Phnom Pen, Cambodia	Ngonn	Seam	EM&MI 2.4