

S O T I R I S K O N S T A N T I N O U - R I Z O S

19 Pobedy str., 150003 Yaroslavl, Russia

✉ skonstantin84@gmail.com 📞 +7 (989) 917-25-85

EDUCATION

- 2010 - 2014 **PhD in Applied Mathematics**, University of Leeds, UK.
Supervisor: A.V. Mikhailov. Adviser: F.W. Nijhoff.
- 2006 - 2009 **MSc in Applied Mathematics**, University of Patras, Greece. Grade: 8.6/10 (distinction).
- 2002 - 2006 **BSc (Hons) in Mathematics**, University of Patras, Greece. Grade: 8.18/10 (Ranked 4th).

ACADEMIC POSITIONS

- SEP 2020– Associate Professor, Mathematics Faculty, P.G. Demidov Yaroslavl State University, Russian Federation.
Lecturing: *Mathematical Analysis (Calculus)*, *Ordinary Differential Equations*, *Partial Differential Equations*, *Integrable Systems*, *Discrete Integrable Systems*, *N-simplex equations and algebraic structures*, *Advanced Mathematics using packages of symbolic computation (labs)*.
- NOV 2017– Leading researcher (associate Professor), Centre of Integrable Systems, P.G. Demidov Yaroslavl State University, Russian Federation.
Supervisor of the Educational Programme of the Kolmogorov Joint Institute of Mathematics and Computer Sciences.
PhD Students under my supervision: Ksenya Fisenko, Vadim Kolesov, Anastasia Nikitina, Mikhail Kolesnikov.
- DEC 2015– Leading researcher, Institute of Mathematical Physics & Seismodynamics, Chechen State
OCT 2017 University, Russian Federation.
- JUL 2015– Lecturer of Mathematical Physics, Faculty of Mathematics & Computer Technology, Chechen
OCT 2017 State University, Russian Federation.
Lecturing: *Mathematical Analysis I & II*, *Differential Equations* (BSc) and *Introduction to Integrable Systems* (MSc seminars). Seminars: Series of seminars on Differential Equations.

RESEARCH INTERESTS

Integrability of discrete and continuous systems; integrable discretizations of PDEs; Darboux and Bäcklund transformations; Yang-Baxter maps; n -simplex maps, Grassmann algebras; noncommutative extensions of discrete integrable systems; classification of discrete integrable systems.

PUBLICATIONS

JOURNAL
ARTICLES

- [1] S. Konstantinou-Rizos and A.A. Nikitina *Yang–Baxter maps of KdV, NLS and DNLS type on division rings*, Physica D: Nonlinear Phenomena **465**, 134213 (2024)
- [2] M. Chirkov and S. Konstantinou-Rizos *On the solutions of the local Zamolodchikov tetrahedron equation*, Journal of Physics A: Mathematical and Theoretical **57(24)** (2024)
- [3] S. Konstantinou-Rizos *Electric network and Hirota type 4-simplex maps*, Journal of High Energy Physics, **2024(6)**, 94 (2024)
- [4] S. Igonin and S. Konstantinou-Rizos *Set-theoretical solutions to the Zamolodchikov tetrahedron equation on groups and their Lax representations*, Journal of Physics A: Math. Theor. **56** 275202 (2023)
- [5] S. Konstantinou-Rizos, *Birational solutions to the set-theoretical 4-simplex equation*, Physica D: Nonlinear Phenomena **448** 133696 (2023)
- [6] S. Konstantinou-Rizos, *Noncommutative solutions to Zamolodchikov’s tetrahedron equation and matrix six-factorisation problems*, Physica D **440** 133466 (2022)
- [7] S. Igonin and S. Konstantinou-Rizos, *Algebraic and differential-geometric constructions of set-theoretical solutions to the Zamolodchikov tetrahedron equation*, Journal of Physics A: Math. Theor. **55** 405205 (2022)
- [8] X. Fisenko, S. Konstantinou-Rizos and P. Xenitidis, *A discrete DarbouxLax scheme for integrable difference equations*, Chaos, Solitons and Fractals **158** 112059 (2022)
- [9] S. Igonin V. Kolesov, S. Konstantinou-Rizos and M. Preobrazhenskaia, *Tetrahedron maps, YangBaxter maps, and partial linearisations*, Journal of Physics A: Math. Theor. **54** 505203 (2021)
- [10] P. Adamopoulou, S. Konstantinou-Rizos and G. Papamikos, *Integrable extensions of the Adler map via Grassmann algebras*, Theoretical and Mathematical Physics **207(2)** 553–559 (2021)
- [11] V. Buchstaber, S. Igonin, S. Konstantinou-Rizos and M. Preobrazhenskaia, *Yang–Baxter maps, Darboux transformations, and linear approximations of refactorisation problems*, Journal of Physics A: Math. Theor. **53** 504002 (2020)
- [12] S. Konstantinou-Rizos, *Nonlinear Schrödinger type tetrahedron maps*, Nuclear Physics B **960** 115207 (2020)
- [13] S. Konstantinou-Rizos, *On the 3D consistency of a Grassmann extended lattice Boussinesq system*, Nuclear Physics B **951** 114878 (2020)
- [14] S. Konstantinou-Rizos and G. Papamikos, *Entwining Yang-Baxter maps related to NLS type equations*, Journal of Physics A: Math. Theor. **52** 485201 (2019)
- [15] S. Konstantinou-Rizos and T. Kouloukas, *A noncommutative discrete potential KdV lift*, Journal of Mathematical Physics **59:6** 063506 (2018)
- [16] S. Konstantinou-Rizos and A. V. Mikhailov, *Anticommutative extension of the Adler map*, Journal of Physics A: Math. Theor. **49** 30LT03, (2016) **IOPSelect**
- [17] G. Grahovski, S. Konstantinou-Rizos and A. V. Mikhailov, *Grassmann extensions of Yang-Baxter maps*, Journal of Physics A: Math. Theor. **49**, 145202 (2016)
- [18] S. Konstantinou-Rizos, A. V. Mikhailov and P. Xenitidis, *Reduction groups and related integrable difference systems of NLS type*, Journal of Mathematical Physics **56**, 082701 (2015)
- [19] S. Konstantinou-Rizos and A. V. Mikhailov, *Darboux transformations, finite reduction groups and related Yang-Baxter maps*, Journal of Physics A: Math. Theor. **46**, 425201 (2013)

BOOK
CHAPTERS

- [1] D. Bilman and S. Konstantinou-Rizos, *Discrete integrable systems, Darboux transformations and Yang-Baxter maps*, in *Symmetries and Integrability of Difference Equations*, D. Levi et al. (eds.), CRM Series in Mathematical Physics, Springer, DOI: 10.1007/978-3-319-56666-5_5 (2017)

EDITORIAL
WORK

- [1] V. M. Buchstaber (Ed.), S. Konstantinou-Rizos (Ed.) and A. V. Mikhailov (Ed.), *Recent developments in integrable systems and related topics of mathematical physics*, PROMS, Springer, DOI: 10.1007/978-3-030-04807-5 (2018)

GRANTS

-
- 2023 (Supervisor) Grant from the Russian Science Foundation “Research by scientific groups under the supervision of young scientists,” Presidential program of research projects implemented by leading scientists, including young scientists (grant number 23-71-50012). Duration: 2 years.
 - 2022 (Supervisor) Grant from the Ministry of Science and Higher Education of the Russian Federation for the organisation of a satellite international scientific conference.
 - 2021–2024 (Participant) Grant from the Russian Science Foundation “Nonlinear dynamics: regular, singular and numerical-analytical methods for studying distributed systems” (grant number 21-71-30011). Budget: 1560000 euro.
 - 2020–2022 (Supervisor) Grant from the Russian Foundation for Basic Research “Research events” for the organisation of international scientific conference (grant number 20-01-22037).
 - 2020 (Supervisor) Grant from the Russian Science Foundation “Research by scientific groups under the supervision of young scientists,” Presidential program of research projects implemented by leading scientists, including young scientists (grant number 20-71-10110). Duration: 3 years. Budget: 200000 euro.
 - 2020 London Mathematical Society “Research in pairs scheme 4” (LMS, Ref. 41962), UK.
 - 2020 Grant “Research in groups” International Mathematical Centre (ICM), UK.
 - 2019 University of Essex Visiting Fellowship grant. Four week visit, November 2019.
 - 2019 (Co-supervisor) State Programme of the Ministry of Education and Science of the Russian Federation, project No 1.13560.2019/13.1. Budget: 265000 euro.
 - 2018 London Mathematical Society Short Visit Grant Scheme 2, Ref. 21717 (completed). Host: Dr. G. Grahovski, University of Essex, UK.
 - 2018 (Co-supervisor) State Programme of the Ministry of Education and Science of the Russian Federation, project No 1.12873.2018/12.1. Budget: 305000 euro.
 - 2017 (Co-supervisor) State Programme of the Ministry of Education and Science of the Russian Federation, project 1.10160.2017/5.1. Co-supervisor of the grant. Budget: 240000 euro.

CONFERENCE ORGANISATION

- OCT 2024 Chairman of the organising committee and member of the programming committee of the 5th International Conference on Integrable Systems & Nonlinear Dynamics, Yaroslavl, Russia. Webpage: <https://lomonosov-msu.ru/eng/event/8920/>.
- SEP 2023 Chairman of the organising committee and member of the programming committee of the 4th International Conference on Integrable Systems & Nonlinear Dynamics, Yaroslavl, Russia. Webpage: <https://lomonosov-msu.ru/eng/event/8178/>.
- JULY 2022 Chairman of the organising committee and member of the programming committee of the Satellite International Conference of Nonlinear Dynamics and Integrability & Scientific School “Nonlinear Days” in Yaroslavl, Russia. Webpage: <https://lomonosov-msu.ru/eng/event/6251/>.
- OCT 2021 Chairman of the organising committee of the 3rd International Conference of Integrable Systems & Nonlinear Dynamics in Yaroslavl, Russia. Webpage: <https://lomonosov-msu.ru/eng/event/6844/>.
- OCT 2020 Chairman of the organising committee of the 2nd International Conference of Integrable Systems & Nonlinear Dynamics in Yaroslavl, Russia. Webpage: <https://lomonosov-msu.ru/eng/event/6054/>.
- AUG 2019 Organising committee of the IX-th International Conference SOLITONS, COLLAPSES AND TURBULENCE: Achievements, Developments and Perspectives (SCT-19) in honor of Vladimir Zakharov’s 80th birthday in Yaroslavl, Russia. Webpage: <https://lomonosov-msu.ru/eng/event/5298/>.
- OCT 2018 Chairman of the organising committee of the International Conference of Integrable Systems & Nonlinear Dynamics in Yaroslavl, Russia. Webpage: <https://lomonosov-msu.ru/eng/event/5122/>.
- AUG 2017 Organising committee of the International Conference of Math. Physics *Kezenoi-Am 2017* in Grozny, Russia.
- OCT 2016 Organising committee of the International Conference of Mathematical Physics *Kezenoi-Am 2016* in Grozny, Russia.

PRESENTATIONS

INTERNATIONAL CONFERENCES AND WORKSHOPS

- SEP 2024 *Integrable discretisation of a noncommutative NLS equation, soliton solutions, and Yang–Baxter maps*, “ISQT2024,” St. Petersburg State University, St. Petersburg, Russia.
- JUL 2024 *Soliton solutions of an integrable discretisation of the NLS equation*, Serbian Academy of Sciences, Belgrade, Serbia.
- FEB 2024 *Darboux transformations and Yang–Baxter maps on noncommutative division rings*, “Dynamics in Siberia”, Sobolev institute of Mathematics of the Russian Academy of Sciences, Novosibirsk, Russia.
- SEP 2023 *N-simplex maps on groups and rings*, International Conference “Geometry and Integrability”, Skoltech and Higher School of Economics, Moscow, Russia.
- FEB 2023 *N-simplex maps and Lax representations on groups*, International conference “Dynamics in Siberia,” Sobolev Institute of the Russian Academy of Sciences, Novosibirsk, Russia.
- NOV 2022 *Method for constructing solutions to integrable PΔEs*, “Conference of Mathematical Centres”, Lomonosov Moscow State University, Moscow, Russia.
- JUL 2022 *Yang–Baxter maps and Discrete Integrable Systems*, “28th Summer School-Conference on Dynamical Systems and Complexity dedicated to T. Fokas’ 70th birthday”, Chania, Crete, Greece.
- MAY 2022 *Discrete Integrable Systems and Yang–Baxter maps*, “All-Russian forum for popularisation of Mathematics and Mathematical Education”, Sofia Kovalevskaya Northwestern Centre for Mathematical Research, Pskov State University, Russia.
- NOV 2021 *A discrete Darboux–Lax scheme for solving systems of integrable difference equations*, “Regular and chaotic dynamics”, Steklov Mathematical Institute, Moscow, Russia.
- SEP 2021 *Darboux transformations and Zamolodchikov’s tetrahedron equation*, “International Conference ‘Integrability’ dedicated to the 75th anniversary of A.K. Pogrebkov”, (Online) Steklov Mathematical Institute, Moscow, Russia.
- AUG 2020 *NLS type tetrahedron maps*, “Conference of Mathematical Centres”, Sirius, Sochi.
- FEB 2020 *On the 3D consistency of Grassmann extended lattice systems*, International conference “Dynamics in Siberia”, Sobolev Institute, Novosibirsk, Russia.
- JUN 2017 *Grassmann extension scheme: a noncommutative dpKdV system*, International conference “Recent Advances in Hamiltonian and Nonholonomic Dynamics,” Moscow Institute of Physics and Technology, Moscow, Russia.
- MAY 2017 *Discrete integrable systems and lifts to Yang–Baxter maps: Grassmann extension scheme*, VIIIth Int. Conf. “SOLITONS, COLLAPSES AND TURBULENCE: Achievements, Developments and Perspectives,” L.D. Landau inst. of Theoretical Physics, RAS, Moscow, Russia.
- FEB 2017 *Lifts to noncommutative extensions of Yang–Baxter maps*, International conference “Dynamics in Siberia”, Sobolev Institute, Novosibirsk, Russia.
- JUL 2016 *Noncommutative extensions of Yang–Baxter maps associated to NLS type equations*, International conference “SIDE 12,” (Symmetries and Integrability of Difference Equations) Montreal, Canada.
- JUN 2016 *Darboux & Bäcklund transformations: discrete systems, matrix refactorisation problems and Yang–Baxter maps I & II*, Abecedarian of International SIDE summer school, Montreal, Canada.
- MAR 2016 *Grassmann extensions of Yang–Baxter maps related to NLS type equations*, International conference “Dynamics in Siberia,” Sobolev Institute, Novosibirsk, Russia.
- SEP 2015 *Integrability properties of NLS type equations via Darboux transformations, and related Yang–Baxter maps*, International conference “Toric Topology, Number Theory and Applications,” Khabarovsk, Russia.
- JUL 2014 *Integrability of discrete systems and complete integrability of Yang–Baxter maps*, 1st Early Career South East Mathematical Physics Seminar, Kent, UK.
- JUL 2013 *Darboux transformations, discrete integrable systems and related Yang–Baxter maps*, International workshop “Discrete Integrable Systems,” (a follow-up meeting) Isaac Newton institute, Cambridge, UK.

JUN 2013 *Darboux transformations and related Yang-Baxter maps*, International conference “15th Geometry, Integrability and Quantization,” Varna, Bulgaria.

INVITED TALKS AT SEMINARS

NOV 2019 *Integrable discretisations of nonlinear PDEs and related Yang-Baxter maps*, Liverpool Hope University, UK.

FEB 2019 *Darboux transformations and related discrete integrable systems and Yang-Baxter maps*, Lomonosov Moscow State University, Russia.

JAN 2019 *Darboux transformations, Yang-Baxter maps and their noncommutative extensions*, Heriot-Watt University, Edinburgh, UK.

JAN 2019 *Grassmann extensions of discrete Integrable Systems and their associated Yang-Baxter maps*, University of Leeds, UK.

JAN 2019 *Darboux transformations and Yang-Baxter maps*, University of Essex, UK.

JUL 2018 *A Grassmann-extended discrete potential KdV*, International Workshop on “Classical and Quantum Integrable Systems CQIS-2018,” Protvino, Russia.

POSTERS

APR 2013 *Yang-Baxter maps and reduction groups with degenerate orbits*, BAMC International conference, Leeds, UK.

JUN 2012 *Implicit Yang-Baxter maps and reduction groups with degenerate orbits*, International conference “SIDE 10,” Ningbo, China.

PREVIOUS TEACHING EXPERIENCE

POSTGRADUATE TUTOR, UNIVERSITY OF LEEDS, UK

2013 - 2014 *Linear Differential Equations and Transforms, Nonlinear Differential Equations (Dynamical Systems), Numbers & Vectors and Number Systems.*

2012 - 2013 *Calculus and Mathematical Analysis, Mathematics I and Modelling with Differential Equations.*

2011 - 2012 *Calculus and Mathematical Analysis, Introductory Linear Algebra, Mathematics I and Modelling with Differential Equations.*

MATHS SUPPORT TUTOR, UNIVERSITY OF LEEDS, UK

2013 - 2014 Support to University of Leeds students with difficulties in mathematics, Maths Support Centre, University of Leeds.

POSTGRADUATE TUTOR, UNIVERSITY OF PATRAS, GREECE

2009 - 2010 *Ordinary Differential Equations I, Partial Differential Equations I, Partial Differential Equations II* and (lab) *Adv. Math. & App. with Mathematica & Maple.*

2008 - 2009 *Ordinary Differential Equations I, Partial Differential Equations II* and (lab) *Adv. Math. & App. with Mathematica & Maple.*

2007 - 2008 *Special Relativity, Partial Differential Equations II* and (lab) *Adv. Math. & App. with Mathematica & Maple.*

SCHOLARSHIPS/ AWARDS

2024 Letter of thanks from the Governor of the Yaroslavl Region for preparing the winner of the competition of scientific research works of students of universities of the Yaroslavl Region.

- 2024 Gratitude from the Federation Council (SF RF) for participation in the development of mathematical education in the Yaroslavl region and successful management of promising scientific research in fundamental mathematics at Yaroslavl State University.
- 2024 Gratitude from the Federation Council (SF RF) for active participation in the development of mathematical education in the Yaroslavl region and management of promising scientific research in the field of fundamental mathematics. Congratulations on your 40th anniversary.
- 2024 Certificate of honor from the Rector of Yaroslavl State University for active participation in scientific research and winning grant competitions.
- 2024 Certificate of honor from the Rector of Yaroslavl State University for exceptionally conscientious and exemplary performance of official duties, active work and high performance in research work and in connection with the anniversary date of birth.
- 2024 Gratitude from the Rector of Yaroslavl State University for successful leadership of research work of students-winners of the annual competition "Best Student of Yaroslavl State University in the Field of Research for 2023".
- 2023 Gratitude from the Yaroslavl City Hall for conscientious work, significant contribution to the development of the sphere of professional education, successes and achievements in scientific and pedagogical work.
- 2023 Certificate of honor from the Ministry of Social Communications and Development of Non-Commercial Organizations of the Yaroslavl Region for success in scientific leadership of young scientists.
- 2023 Gratitude from the Acting Rector of the YarSU for the successful management of the research work of the winning students of the annual competition "The Best Student of the YarSU in the field of research for 2022" (Order No. 164 dated February 17, 2023).
- 2023 IOP Trusted reviewer award.
- 2021 A letter of thanks from the Mayor of the city of Yaroslavl for success in the development of higher professional education, significant scientific achievements and their implementation in the realisation of national projects.
- 2021 Certificate of honor from the Rector of YarSU for the active successful management of research projects and high rates of scientific work (Order No. 517 dated May 20, 2021).
- 2010 The University of Leeds "William Wright Smith Scholarship" (full time PhD scholarship granted by the University of Leeds) and "J.E. Crowther scholarship" (contribution to fees).
- 2004 Scholarship from the Greek State Scholarships Foundation for my performance in my 2nd year of my undergraduate studies.
- 2003 Scholarship from the Greek State Scholarships Foundation for my performance in my 1st year of my undergraduate studies.

ADDITIONAL SKILLS

LANGUAGES	Greek (Native), English (Fluent), Russian (Fluent);
COMPUTER SKILLS	Mathematica, Maple, L ^A T _E X;
REFEREEING	International Journal of Geometric Methods in Modern Physics, Journal of Applied Nonlinear Dynamics, Journal of Bifurcations and Chaos, Journal of Difference Equations and Applications Journal of Physics A: Mathematical and Theoretical, Nonlinear Dynamics, Physica D: Nonlinear Phenomena, Physica Scripta, Physics Letters A, Proceedings of the Royal Society A, SIGMA (Symmetry, Integrability and Geometry: Methods and Applications) Theoretical and Mathematical Physics.