Personal Information

Name in passport:	Semen Artamonov
Name in publications:	Semeon Arthamonov
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Professional experience

07.2024–present *Associate Professor*
Beijing Institute of Mathematical Sciences and Applications, Beijing, China

08.2022–06.2024 *Postdoctoral Fellow*
Department of Mathematics, University of Toronto, Toronto ON, Canada

07.2021–09.2022 *CRM-ISM Postdoctoral Fellow*
Centre de Recherches Mathématiques, Montréal QC, Canada

07.2018–06.2021 *Morrey Visiting Assistant Professor*
University of California, Berkeley, Berkeley CA, USA

09.2013–05.2018 *Teaching Assistant* (part-time)
Rutgers, The State University of New Jersey, New Brunswick NJ, USA

10.2006–08.2013 *Laboratory Assistant, Engineer* (part-time)
Institute for Theoretical and Experimental Physics, Moscow, Russia

Education and Academic degrees

09.2013-05.2018 Rutgers, The State University of New Jersey, New Brunswick NJ, USA

Ph.D. in Mathematics (May 2018)
Thesis: Generalized Quasi Poisson Structures and Noncommutative Integrable Systems, Thesis advisor: Prof. V. Retakh

09.2006-06.2012 Moscow Institute of Physics and Technology, Moscow, Russia

M.S. in Applied Mathematics and Physics (June 2012)
Thesis: Modifications of bundles as generating functions of Lax operators
Scientific advisor: Dr. A. Zotov

B.S. in Applied Mathematics and Physics (June 2010)
Thesis: Double scaling limit of the elliptic $\mathrm{SL}(N,\mathbb{C})$ top
Scientific advisor: Dr. M. Olshanetsky

Research Interests

Algebra, Representation Theory, Integrable Systems, Noncommutative Geometry.

Academic publications

Preprints submitted for peer-review

- S. Arthamonov, L. Chekhov, P. Di Francesco, R. Kedem, G. Schrader, A. Shapiro, M. Shapiro
  Cluster structure on genus 2 spherical DAHA: seven-colored flower
  arXiv:2402.16074

Preprints accepted for publication

- S. Arthamonov
  Classical limit of genus two DAHA
  Selecta Mathematica (to appear)

Manuscripts published in peer-reviewed journals

16. S. Arthamonov, Sh. Shakirov
    An Elliptic Generalization of A_1 Spherical DAHA at $K = 2$
    International Mathematics Research Notices 2024 (19), 13046-13084

15. S. Arthamonov, N. Ovenhouse, M. Shapiro
    Noncommutative networks on a cylinder
    Commun. Math. Phys. 405, 129 (2024) DOI:10.1007/s00220-023-04873-9

14. S. Arthamonov, J. Harnad, J. Hurtubise
    Lagrangian Grassmannians, CKP hierarchy and hyperdeterminantal relations
    Commun. Math. Phys. 401 (2), 1337-1381 (2023) DOI:10.1007/s00220-023-04670-4

13. S. Arthamonov, J. Harnad, J. Hurtubise
    Tau functions, infinite Grassmannians and lattice recurrences
    J. Math. Phys. 64, 023502 (2023) Editor's pick.

12. S. Arthamonov, N. Reshetikhin
    Superintegrable Systems on Moduli Spaces of Flat Connections
    Comm. Math. Phys., July 2021, 386(3), 1337-1381.

11. S. Arthamonov, Sh. Shakirov
    Refined Chern-Simons Theory for genus two,
    JKTR, July 2020, Vol. 29 No. 7, 2050044.

10. S. Arthamonov, Sh. Shakirov
    Genus two Generalization of A_1 spherical DAHA,
    Selecta Math. (New Series), February 2019, Vol. 25, 17.

9. S. Arthamonov
   Modified Double Poisson Brackets,
   Journal of Algebra, December 2017, Vol. 492, pp 212-233.

8. S. Arthamonov,
   Noncommutative Inverse Scattering Method for the Kontsevich system,
   Lett. Math. Phys., September 2015, Vol. 105, Issue 9, pp 1223-1251.

7. G. Aminov and S. Arthamonov,
New linear problems for Painlevé equations III-V,
Contructive Approximation, June 2015, Vol. 41, Issue 3, pp 357–383.

6. G. Aminov, S. Arthamonov, A. Smirnov, A. Zotov,
Rational Top and its Classical R-matrix,
J. Phys. A: Math. Theor., July 2014, Volume 47, 305207.

5. S. Arthamonov, A. Mironov, A. Morozov,
Differential hierarchy and additional grading of knot polynomials,
Theoretical and Mathematical Physics, May 2014, Volume 179, Issue 2, pp 509-542.

4. S. Arthamonov, A. Mironov, A. Morozov, A. Morozov,
Link polynomial calculus and the AENV conjecture,
JHEP, April 2014, p 156.

3. G. Aminov and S. Arthamonov,
Reduction of the elliptic Schlesinger system,
Theoretical and Mathematical Physics, January 2013, Volume 174, Issue 1, pp 1–20.

2. S. Arthamonov,
New integrable systems as a limit of the elliptic $SL(N,\mathbb{C})$ top,
Theoretical and Mathematical Physics, May 2012, Volume 171, Issue 2, pp 589-599.

1. G. Aminov and S. Arthamonov,
Reduction of the elliptic $SL(N,\mathbb{C})$ top,
J. Phys. A: Math. Theor. 44 075201, 2011.

Invited Talks

38. *Genus two Double Affine Hecke Algebra and its Classical Limit*,
Geometric Representation Theory seminar, Tsinghua University, (Beijing, China; 2024)

37. *Genus two Double Affine Hecke Algebra and its Classical Limit*,
Topics in Representation Theory seminar,
Beijing Institute of Mathematical Sciences and Applications, (Beijing, China; 2024)

36. *Moduli spaces of flat connections: Bridging different areas of Mathematics*,
Member Seminar,
Beijing Institute of Mathamtical Sciences and Applications, (Beijing, China; 2024)

35. *Genus two Double Affine Hecke Algebra and its Classical Limit*,
Symplectic Geometry Seminar, University of Toronto, (Toronto ON, Canada; 2023)

34. *Double Affine Hecke Algebras beyond genus one*, Ohio State University. (Online; 2023)

33. *Infinite Lagrangian Grassmannians and Lattice Recurrences of type C*,
Séminaire Physique Mathématique, Centre de Recherches Mathématiques, Montréal. (2023)

32. *Superintegrable Systems on Moduli Spaces of Flat Connections*,
Symplectic Geometry Seminar, University of Toronto. (Toronto ON, Canada; 2022)

31. *CKP hierarchy and Infinite dimensional Lagrangian Grassmannian*,
Séminaire Physique Mathématique, Centre de Recherches Mathématiques, Montréal. (2022)

30. *Genus two Double Affine Hecke Algebra and its classical limit*,
Wales MPPM Seminar, Cardiff University (Online; 2021)

29. *Superintegrable Systems on Moduli Spaces of Flat Connections*,
Hamiltonian Systems Seminar, University of Arizona and University of Toronto (Online; 2021)

28. *Poisson Geometry of Noncommutative Cluster Algebras*,
Séminaire Physique Mathématique, Centre de Recherches Mathématiques, Montréal. (2021)

27. *Poisson Geometry of Noncommutative Cluster Algebras*,
Cluster Algebra Seminar, Michigan State University. (East Lansing MI, USA; 2020)

26. *Poisson Geometry of Noncommutative Cluster Algebras*,
Special Session on Canonical Bases, Cluster Structures and Non-commutative Birational Geometry, AMS Fall Western Sectional Meeting. (Riveside, CA, USA; 2019)

25. *A q,t-Integrable System on a Genus Two Surface*,
String-Math Seminar, University of California, Berkeley. (Berkeley CA, USA; 2018)

24. *Genus Two Generalization of A_1 spherical Double Affine Hecke Algebra*,
Representation Theory Seminar, University of Illinois at Urbana-Champaign. (Urbana IL, USA; 2018)

23. *Genus Two Generalization of A_1 spherical Double Affine Hecke Algebra*,
Topology Seminar, University of California, Berkeley. (Berkeley CA, USA; 2018)

22. *Genus Two Generalization of A_1 spherical Double Affine Hecke Algebra*,
Lie Groups and Quantum Mathematics Seminar, Rutgers University. (Piscataway NJ, USA; 2018)

21. *Genus Two Generalization of A_1 spherical Double Affine Hecke Algebra*,
Geometry, Symmetry and Physics Seminar, Yale University. (New Haven CT, USA; 2018)

20. *A genus two analogue of the spherical Double Affine Hecke Algebra*,
Lie Groups Seminar, Cornell University. (Ithaca NY, USA; 2018)

19. *Representation theory of A_1 spherical DAHA*,
Informal Mathematical Physics Seminar, Columbia University. (New York NY, USA; 2017)

18. *Genus two analogue of A_1 spherical DAHA*, Combinatorics, Algebra, and Geometry Seminar,
University of Pennsylvania. (Philadelphia PA, USA; 2017)

17. *Modified Double Poisson Brackets*,
Seminar of Mathematical Physics and Algebraic Topology at University of Angers. (Angers, France; 2017)

16. *Modified Double Poisson Brackets*,
Séminaire: Groupes de Lie et espaces des modules,
University of Geneva. (Geneva, Switzerland; 2017)

15. *A q,t-Integrable System on a Genus Two Surface*,
Informal Mathematical Physics Seminar, Columbia University. (New York NY, USA; 2017)

14. *Noncommutative Poisson Geometry*,
Algebra Seminar at Rutgers, The State University of New Jersey. (Piscataway, NJ, USA; 2016)

13. *Noncommutative Integrable Systems*,
Seminar of Mathematical Physics and Algebraic Topology at University of Angers. (Angers, France; 2016)

12. *Noncommutative Inverse Scattering Method for the Kontsevich system*,
Integrable Systems and Quantum Symmetries 2015. (Prague, Czech Republic; 2015)

11. *Noncommutative Inverse Scattering Method for the Kontsevich system*,
International Workshop on Mathematical Physics at University of Amsterdam. (Amsterdam, Netherlands; 2015)

10. *Noncommutative Inverse Scattering Method for the Kontsevich system*,
AMS Special Session on Integrable Combinatorics (East Lansing, MI, USA; 2015)

9. *HOMFLY polynomial calculus for links and AENV conjecture*,
Conference "Knot Theory and Its Applications to Physics and Quantum Computing" (Dallas, TX, USA; 2015)

8. *Noncommutative Inverse Scattering Method for the Kontsevich system*,
Representation Theory and Mathematical Physics Seminar at UC Berkeley (Berkeley, CA, USA; 2014)

7. *HOMFLY polynomial calculus for links and AENV conjecture*,
International workshop "Group Theory and Knots" (Natal, RN, Brasil; 2014)

6. *HOMFLY polynomial calculus for links and AENV conjecture*,
Informal Mathematical Physics Seminar at Columbia University (New York, NY, USA; 2014)

5. *Quantum A-polynomials for knots using q-Zeilberger algorithm*,
Experimental Mathematics Seminar at Rutgers, The State University of New Jersey (Piscataway, NJ, USA; 2013)

4. *Differential hierarchy and Z-decomposition of knot polynomials*,
International conference "Integrable Systems and Quantum Symmetries - 2013" (Prague, Czech Republic; 2013)

3. 2×2 *linear problems for Painlevé equations I-V*,
International Workshop "Synthesis of integrabilities arising from gauge-string duality" (Osaka, Japan; 2012)

2. 2×2 *linear problems for Painlevé equations I-V*,
International conference "Classical and Quantum Integrable Systems - 2012" (Dubna, Russia; 2012)

1. *New integrable systems from the elliptic $SL(N,\mathbb{C})$ top*,
International conference "Classical and Quantum Integrable Systems - 2011" (Protvino, Russia; 2011).

Teaching experience

University of Toronto

Winter 2024	Complex Variables (MAT334)
Fall 2023	Linear Algebra I (MAT223)
Fall 2022-Winter 2023	Multivariable Calculus with proofs (MAT237)

University of California, Berkeley

Spring 2021	Lie Groups (Math-251A)
Fall 2020	Introduction to Abstract Algebra (Math-113)
Fall 2020	Introduction to Complex Analysis (Math-185)
Spring 2020	Introduction to Abstract Algebra (Math-113)
Fall 2019	Elementary Algebraic Topology (Math-142)
Fall 2019	Introduction to Abstract Algebra (Math-113)
Spring 2019	Introduction to Complex Analysis (Math-185)
Spring 2019	Introduction to Real Analysis (Math-104)
Fall 2018	Introduction to Complex Analysis (Math-185)

Rutgers, The State University of New Jersey

Spring 2018	TA (Workshop Instructor), Calculus III (Math-251)
Spring 2017	TA (Workshop Instructor), Introduction to Real Analysis (Math-311 Honors)
Fall 2016	Head TA (Workshop Instructor), Calculus II (Math-152)
Summer 2016	TA (Workshop Instructor), Abstract Algebra (SPP for Graduate Students)
Spring 2016	TA (Workshop Instructor), Calculus III (Math-251)
Fall 2015	TA At Large, Advanced Calculus for Engineering (Math-421)
Spring 2015	TA (Workshop Instructor), Calculus III (Math-251)
Fall 2014	TA (Recitation Instructor), Calculus I (Math-135)
Spring 2014	TA (Grader), Intro to Theory of Functions of Complex Variable (Math-403)
Fall 2013	TA (Grader), Abstract Algebra I (Math-451)

Volunteer experience in educational projects

Spring 2020	Reading Course Instructor "Introduction to Knot Theory"
Fall 2019	Reading Course Instructor "Mathematical Methods of Classical Mechanics"
Fall 2014 - Spring 2018	Coordinator of Directed Reading Program in Math for Undergraduate Students at Rutgers
Fall 2015 - Spring 2018	Co-founder and member of organizing committee of online International Theoretical Physics Olympiad for undergraduate students,
Fall 2016	DRP Mentor for Srivatsa Tata (project: Differential Geometry and Yang-Mills Theory)
Fall 2013	DRP Mentor for Richard Wong (project: Knot Theory)

Personal Honors and Awards

2017	Rutgers SAS Excellence Fellowship for dissertation work in Mathematics
2012-2013	ITEP grant for young scientists for 2012-2013 academic year
2012	Dynasty Foundation Fellowship for young physicists
2011-2012	ITEP grant for young scientists for 2011-2012 academic year
2010-2011	ITEP grant for young scientists for 2010-2011 academic year
2007-2009	Abramov Foundation for Innovative Education grant

Co-organized Seminars

Fall 2018 - Spring 2021	Informal String-Math Seminar at UC Berkeley
Fall 2018 - Spring 2021	Representation Theory and Mathematical Physics Seminar

Co-organized Conferences

June 2018	Non-commutative structures, cluster algebras and applications University of Angers, France

Referee experience

I have served as a referee in the following mathematical journals:

- International Mathematics Research Notices
- Selecta Mathematica
- Journal of Geometry and Physics
- Documenta Mathematica