

Solovyev Dmitry

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Citizenship	Russian Federation	Email	dimsol42@gmail.com
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Research Interests

- Representation theory of quantum groups and Lie algebras
- Mathematical physics(Integrable models and probability, TQFT, PDEs)

Education

2014-2018 **Saint Petersburg State University**, High Energy and Elementary Particle Physics, B.Sc. in Physics(with Honours)

Thesis: *"Crystal bases for spin chains in the AdS/CFT correspondence"*

Dissertation advisor: Anton A. Nazarov, Gleb E. Arutyunov

2018-2020 **Saint Petersburg State University**, High Energy and Elementary Particle Physics, M.Sc. in Physics(apparently, with Honours)

Thesis: *"Restricted random walks and large tensor powers of representations of quantum groups at roots of unity"*

Dissertation advisor: Nicolai Yu. Reshetikhin

Publications

- Postnova, O.; Reshetikhin, Yu.; Solovyev, D. Multiplicities of indecomposable representations in tensor powers of representations of the small quantum sl_2 at roots of unity and random walks, TBA
- Dymarskiy, A.; Pavlenko, K.; Solovyev, D. On Virasoro expression of quantum KdV charges, TBA
- Sheykin, A.; Paston, S.; Solovyev, D. Differential transformations of field variables in gravity and their cosmological applications, TBA
- Sheykin, A.; Solovyev, D.; Paston, S. Global Embeddings of BTZ and Schwarzschild-AdS Type Black Holes in a Flat Space. *Symmetry* 2019, 11, 841.

Grants and awards

- Increased State Academic Scholarship, 2019
- Russian Foundation for Basic Research, "Study of fluctuations in statistical mechanics models in the presence of the limit shape", 18-01-00916
- Russian Foundation for Basic Research, "The study of modified theories of gravity based on alternative choice of variables", 18-31-00169
- Russian Foundation for Basic Research, "Study of the evolution equations in gauge theories", 19-02-00983

Talks

- "Introduction to determinantal point processes", Integrable probability seminar, PDMI, 2019
- "Multiplicities of irreducible and indecomposable components in large tensor powers of representations of $u_q(sl_2)$ at roots of unity and random walks", Saint Petersburg Seminar on Representation theory and Dynamical Systems, PDMI, 2019
- "Global embeddings of BTZ and Schwarzschild-AdS metrics and their geometric properties", OpenScience Forum, Gatchina, 2019
- "The limit shape phenomena in representation theory of quantum groups", International School of Subnuclear Physics, Sicily, Italy, 2019
- "Spectral geometry as an extension of the Standard Model", Special Seminar on Weak Interaction Theory, SPBSU, Department of High Energy and Elementary Particle Physics, 2019
- "Introduction to the Volume Conjecture", Topics in Modern Physics, SPBSU, Department of High Energy and Elementary Particle Physics, 2019
- Crystal bases for spin chains in the AdS/CFT correspondence, International Student Conference "Science and Progress", 2018
- "The basics of TQFT", Special Seminar on Quantum Field Theory, SPBSU, Department of High Energy and Elementary Particle Physics, 2018
- Global isometric embeddings of AdS black holes in a flat space, VI International Conference "Models in Quantum Field Theory", 2018
- "Hopf algebras and quantum groups", Pre-CQIS Summer School on Theoretical and Mathematical Physics, Center for Advanced Studies, Skoltech, 2018
- "Introduction to Lie algebras, quantum groups and crystal bases", Quantum Field Theory Seminar, PDMI, 2017
- "Group central extensions", Mathematical Physics Student Seminar, SPBSU, 2016

Participation in conferences and schools

- Fifth Winter School-Conference "String Theory, Integrable Models and Representation Theory", Center for Advanced Studies, Skoltech, Moscow, 2020
- Classical and Quantum Integrable Systems, EIMI, Saint Petersburg, 2019
- International School of Subnuclear Physics, Sicily, Italy, 2019
- Euler Symposium in Theoretical and Mathematical Physics, EIMI, Saint Petersburg, 2019
- The Art of Quantization (dedicated to 85th anniversary of L.D.Faddeev), EIMI, Saint Petersburg, 2019
- Fourth Winter School-Conference "String Theory, Integrable Models and Representation Theory", Center for Advanced Studies, Skoltech, Moscow, 2019
- VI International Conference "Models in Quantum Field Theory", Saint Petersburg, 2018
- Pre-CQIS Summer School on Theoretical and Mathematical Physics, Center for Advanced Studies, Skoltech, Moscow, 2018
- Third Winter School-Conference "String Theory, Integrable Models and Representation Theory", Center for Advanced Studies, Skoltech, Moscow, 2018
- Conference: Integrable Models in Statistical Mechanics, Limit Shapes and Combinatorics, EIMI, Saint Petersburg, 2017
- Summer school: Integrable Models in Statistical Mechanics, Limit Shapes and Combinatorics, EIMI, Saint Petersburg, 2017
- BASIS Foundation Summer school for "Modern tendencies in theoretical physics of fundamental interactions", Moscow, 2017

Teaching

March 2019 - Present

ITMO University, Faculty of Physics, Saint Petersburg
Teacher, research project supervisor

Seminars on classical mechanics, electrodynamics, quantum physics

November 2018 - Present

UNICHANCE, Saint Petersburg
Teacher

Popular lectures on mathematics and physics for pre-college students, SAT preparation workshops on mathematics and physics

September 2014 - Present

Private Tutoring
Tutor

Higher mathematics, probability theory and statistics, general physics, mathematics and physics for pre-college students(SAT's and olympiads)

Additional information

- **Languages:** Russian(native), English(fluent), German(intermediate), French(intermediate)
- **Programming:** Wolfram Mathematica, Matlab, Maple, FORM, C++
- **Interests:** Philosophy(Husserl, Kant), Programming, Photography