

Anton Shchekhin

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INFORMATION

GENERAL Full name: **Shchekhin Anton Igorevich**
INFORMATION Date and place of birth: May 23, 1992, Kiev
Citizenship: Russia, Ukraine
Country of residence: Russia

EDUCATION **Taras Shevchenko National University of Kiev**, Kiev, Ukraine,
Faculty of Physics

Bachelor of Physics, specialization Quantum Field Theory, June 2013

- Topic of qualifying work: *Field theory approach to the τ -function of Painleve III equation*
- Scientific advisor: Nikolai Iorgov, Dr. Sci in Physics and Mathematics

Master of Physics, specialization Quantum Field Theory, June 2015
(diploma)

- Topic of qualifying work: *Bilinear equations on Painlevé τ function from CFT*
- Scientific advisor: Nikolai Iorgov, Dr. Sci in Physics and Mathematics

National Research University Higher School of Economics, Moscow,
Russia,
Faculty of Mathematics

Master of Mathematics, specialization Mathematical Physics,
June 2016

- Topic of qualifying work: *Painleve III equation: tau functions, representation theory and q-deformations.*
- Scientific advisor: Mikhail Bershtein, Dr. in Physics and Mathematics

CURRENT **National Research University Higher School of Economics**, Moscow,
POSITION Russia,

International Laboratory of Representation Theory and Mathematical
Physics, junior researcher

Faculty of Mathematics, PhD student,

- Topic of qualifying work: *Painleve equations and representation theory*
- Scientific advisor: Mikhail Bershtein, Dr. in Physics and Mathematics

Skolkovo Institute of Science and Technology, Moscow, Russia,

Center for Advanced Studies, PhD student, joint program with HSE
Faculty of Mathematics.

RESEARCH INTERESTS Integrable systems, Conformal Field Theory, Representation Theory, Difference equations, Supersymmetric gauge theories and AGT correspondence, Isomonodromic deformations.

RESEARCH EXPERIENCE **Engineer** November 2013 to December 2013

Laboratory of Integrable Systems,
Bogolyubov Institute for Theoretical Physics,
Kiev, Ukraine
Research topic: Conformal field theory of Painlevé equations, representation theory of conformal algebras.

Research assistant January 2015 – June 2016

International Laboratory of Representation Theory and Mathematical Physics, National Research University Higher School of Economics, Moscow, Russia
Research topic: q -deformed Painlevé equations, rational algebraic surfaces.

Junior researcher From July 2016

International Laboratory of Representation Theory and Mathematical Physics, National Research University Higher School of Economics, Moscow, Russia
Research topic: q -deformed Painlevé equations, instanton moduli spaces of SUSY gauge theories.

TEACHING EXPERIENCE **Instructor**
Bogolyubov Institute for Theoretical Physics,
Scientific and Educational Center
Instructor for the course "Linear algebra". Sep. 2013 – Dec. 2013

Teaching assistant

National Research University Higher School of Economics,
Faculty of Mathematics

- Teaching assistant for the course "Applications of analysis".
Sep. 2014 – Dec. 2014, Sep. 2015 – Dec. 2015, Sep. 2016 – Dec. 2016

- Teaching assistant for the course "Smooth manifolds".
Jan. 2017 – Mar. 2017, Nov. 2017 – Mar. 2018
- Teaching assistant for the course "Functional analysis".
Sep. 2018 – Dec. 2018

Skolkovo Institute of Science and Technology, Center for Advanced Studies

- Teaching assistant for the course "Supersymmetric gauge theories".
Sep. 2019 –

LANGUAGES

- Russian – native
- Ukrainian – fluent
- English – advanced

COMPUTER SKILLS

- C++
- Turbo Pascal
- Delphi
- Wolfram Mathematica

JOURNAL PUBLICATIONS

1. N. Iorgov, O. Lisovyy, A. Shchekhin, Yu. Tykhyy, *Painlevé functions and conformal blocks*, Constructive Approximation 39 (1), (2014), 255-272.
2. M. Bershtein, A. Shchekhin, *Bilinear equations on Painlevé τ functions from CFT*, [[arXiv:1406.3008](#)], Communications in Mathematical Physics 339 (3), (2015), 1021-1061.
3. M. Bershtein, A. Shchekhin, *q -deformed Painleve tau function and q -deformed conformal blocks*, [[arXiv:1608.02566](#)], Journal of Physics A: Mathematical and Theoretical 50 (8), 085202.
4. M. Bershtein, A. Shchekhin, *Bäcklund transformation of Painleve III(D_8) tau function*, [[arXiv:1608.02568](#)], Journal of Physics A: Mathematical and Theoretical 50 (11), 115205.
5. M. Bershtein, A. Shchekhin, *Painleve equations from Nakajima-Yoshioka blowup relations*, [[arXiv:1811.04050](#)], Letters in Mathematical Physics 109 (11), (2019), 2359-2402

CONFERENCE
TALKS

- Young scientists conference Problems of Theoretical Physics, December 2013, BITP, Kiev, Ukraine
- XVIII International Scientific Conference of Young Scientists and Specialists, February 2014, JINR, Dubna, Russia
- Seminar "Systems integrables et la theorie de representations", September 2015, University of Tours, Tours, France
- International School of Representation Theory and Integrable Systems, May 2017, KdV Institute, Amsterdam, Netherlands
- Integrable Models in Statistical Mechanics, Limit Shapes and Combinatorics, August 2017, Euler International Mathematical Institute, Saint-Petersburg, Russia
- Conference Classical and Quantum Integrable Systems (CQIS-2018), July 2018, Institute for High Energy Physics, Protvino, Russia
- Workshop Tau Functions of Integrable Systems and Their Applications, September 2018, Banff International Research Station, Banff, Alberta, Canada
- Conference Symmetries and Integrability of Difference Equations (SIDE13), November 2018, Fukuoka, Japan

AWARDS

- Mendeleev International Chemistry Olympiad, silver medal, Ashgabat, Turkmenistan (2009)
- Young Russian Mathematics competition, winner (2016).

REFERENCES

Dr. Sci. Nikolai Iorgov

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Head of Laboratory of Integrable Systems, Bogolyubov Institute for Theoretical Physics, Kiev, Ukraine

Dr. Mikhail Bershtein

E-mail: mbersht@gmail.com

Researcher, Quantum field theory sector, Landau Institute for Theoretical Physics, Chernogolovka, Moscow region, Russia

Associate Professor, Center for Advanced Studies, Skolkovo Institute of Science and Technology, Moscow, Russia

Researcher, International Laboratory of Representation Theory and Mathematical Physics, National Research University Higher School of Economics, Moscow, Russia

Dr. Andrei Marshakov

E-mail: mars@itep.ru

Head Scientist, Lebedev Physics Institute, Moscow, Russia

Head Scientist, Institute for Theoretical and Experimental Physics,
Moscow, Russia

Professor, Faculty of Mathematics, National Research University Higher
School of Economics, Moscow, Russia

Professor, Center for Advanced Studies, Skolkovo Institute of Science
and Technology, Moscow, Russia

Dr. Oleg Lisovyy

E-mail: lisovyi@lmpt.univ-tours.fr

Instructor-researcher, Laboratoire de Mathématiques et Physique Théorique,
University of Tours, Tours, France