Anton Shchechkin

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General Information

Full name: **Anton Shchechkin**
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 Painlevé III equation*
- Scientific advisor: Nikolai Iorgov, Dr. Sci in Physics and Mathematics

Master of Physics, specialization Quantum Field Theory,
June 2015

- 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: *Painlevé III equation: tau functions, representation theory and q-deformations.*
- Scientific advisor: Mikhail Bershtein, Ph.D. in Physics and Mathematics

Ph.D. in Mathematics, specialization Mathematical Physics,
defence date: 21 October 2020,

- Title of thesis: *Painlevé equations and representation theory*
- Scientific advisor: Mikhail Bershtein, Ph.D. in Physics and Mathematics

Ph.D. studies were held jointly with
Skolkovo Institute of Science and Technology, Moscow, Russia,
Center for Advanced Studies.

Current position

Skolkovo Institute of Science and Technology, Moscow, Russia, Center for Advanced Studies, postdoc (research scientist), from November 2020.

National Research University Higher School of Economics, Moscow, Russia, International Laboratory of Representation Theory and Mathematical Physics HSE-Skoltech, junior researcher, from July 2016

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.

RESEARCH
INTERESTS

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

TEACHING
EXPERIENCE

Instructor

Bogolyubov Institute for Theoretical Physics,
Scientific and Educational Center
Course "Linear algebra".
Sep. 2013 – Dec. 2013

National Research University Higher School of Economics,

- Course "Mathematical methods for natural sciences".
  Sep. 2020 –
- Course "Mathematical analysis".
  Sep. 2020 –

Teaching assistance

National Research University Higher School of Economics,
Faculty of Mathematics

- Course "Applications of analysis".
  Sep. 2014 – Dec. 2014, Sep. 2015 – Dec. 2015, Sep. 2016 – Dec. 2016
- Course "Smooth manifolds".
  Jan. 2017 – Mar. 2017, Nov. 2017 – Mar. 2018
- Course "Functional analysis".
  Sep. 2018 – Dec. 2018
- Course "Constructive methods of functional analysis".
  Jan. 2020 – May 2020

Skolkovo Institute of Science and Technology, Center for Advanced Studies

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

LANGUAGES

- Russian – native

- Ukrainian – fluent

- English – advanced

- French – beginner

COMPUTER
SKILLS

- C++

- Turbo Pascal

- Delphi

- Wolfram Mathematica

JOURNAL
PUBLICATIONS

1. N. Iorgov, O. Lisovyy, A. Shchechkin, Yu. Tykhyy, *Painlevé functions and conformal blocks*, Constructive Approximation 39 (1), (2014), 255-272.

2. M. Bershtein, A. Shchechkin, *Bilinear equations on Painlevé τ functions from CFT*, [`arXiv:1406.3008`], Communications in Mathematical Physics 339 (3), (2015), 1021-1061.

3. M. Bershtein, A. Shchechkin, *q-deformed Painlevé tau function and q-deformed conformal blocks*, [`arXiv:1608.02566`], Journal of Physics A: Mathematical and Theoretical 50 (8), (2017), 085202.

4. M. Bershtein, A. Shchechkin, *Bäcklund transformation of Painlevé III(D_8) tau function*, [`arXiv:1608.02568`], Journal of Physics A: Mathematical and Theoretical 50 (11), (2017), 115205.

5. M. Bershtein, A. Shchechkin, *Painlevé equations from Nakajima-Yoshioka blowup relations*, [`arXiv:1811.04050`], Letters in Mathematical Physics 109 (11), (2019), 2359-2402

6. A. Shchechkin, *Blowup relations on $\mathbb{C}^2/\mathbb{Z}_2$ from Nakajima-Yoshioka blowup relations*, [`arXiv:2006.08582`], Accepted to Theoretical and Mathematical Physics.

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 representationes", 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

LINKS

- https://scholar.google.com/citations?user=TBFQ9HwAAAAJ&hl=en

- https://www.researchgate.net/profile/Anton_Shchechkin

- https://inspirehep.net/authors/1744387

- https://www.scopus.com/authid/detail.uri?authorId=55948808900

GRANTS

1. Project 01-01-14 of NASU

2. Joint NASU-CNRS project F14-2016

3. RFBR Grant mol_a_ved 18-31-20062

4. Russian Science Foundation project 16-11-10316

AWARDS

- Mendeleev International Chemistry Olympiad, silver medal, Ashgabat, Turkmenistan (2009)

- Young Russian Mathematics competition, winner (2016).

REFERENCES   Dr. Nikolai Iorgov   E-mail: iorgov@bitp.kiev.ua

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

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