

Curriculum Vitae of Alexander (Oleksandr) Minakov

International School for Advanced Study (SISSA)
Area of Mathematical Physics
via Bonomea 265, 34136 Trieste, Italy
E-mail: minakov.ilt@gmail.com

RESEARCH INTERESTS

Analysis and Applications, Mathematical Physics: Completely Integrable Systems,
Nonlinear Partial Differential Equations, Quantum Waveguides.

EDUCATION

- March 2013 **Ph.D. in Mathematics (Candidate of Sciences)**, B. Verkin Institute for Low Temperature Physics and Engineering of the National Academy of Sciences of Ukraine.
Advisor: Prof Vladimir Kotlyarov. Thesis: "Riemann–Hilbert problems and the modified Korteweg – de Vries equation: asymptotic analysis of solutions with step-like initial data".
- 2007–2008 **MSc in mathematics (with Honours)**: V. Karazin Kharkiv National University, School of Mathematics and Mechanics, Kharkiv, Ukraine.
- 2003–2007 **BSc in Mathematics**: V. Karazin Kharkiv National University, School of Mathematics and Mechanics, Kharkiv, Ukraine.

POSITIONS HELD

- Nov 2015 – present. Postdoc at International School for Advanced Studies (SISSA), Trieste, Italy.
- May 2013 – Oct 2015. Postdoc at the Czech Technical University in Prague.
- Nov 2011 – May 2013. Junior Researcher at the Mathematical Division of B.Verkin Institute for Low Temperature Physics and Engineering of the National Academy of Sciences of Ukraine, Kharkiv, Ukraine.

PUBLICATIONS

10. Alexander Minakov, *Asymptotics of step-like solutions for the Camassa-Holm equation*, Journal of Differential Equations, Volume 261, Issue 11, 2016, Pages 6055-6098.
<http://dx.doi.org/10.1016/j.jde.2016.08.028>
9. V. Kotlyarov and A. Minakov, *Modulated elliptic wave and asymptotic solitons in a shock problem to the modified Korteweg-de Vries equation*, J. Phys. A 48 (2015), no. 30, 305201, 35 pp.
<http://iopscience.iop.org/article/10.1088/1751-8113/48/30/305201/meta>
8. A. Minakov, *Riemann-Hilbert problem for Camassa-Holm equation with step-like initial data*, Journal of Mathematical Analysis and Applications, 2015, Vol. 429, 81–104.
<http://www.sciencedirect.com/science/article/pii/S0022247X1500284X>
7. P. Exner, A. Minakov, *Curvature-induced bound states in Robin waveguides and their asymptotical properties*, Journal of Mathematical Physics, 2014, Vol. 55, 122101.

<http://dx.doi.org/10.1063/1.4903184>

6. P. Exner, A. Minakov, and L. Parnovski, *Asymptotic eigenvalue estimates for a Robin problem with a large parameter*, Portugal. Math., 2014, Vol. 71, N2, 141–156.
http://www.ems-ph.org/journals/show_abstract.php?issn=0032-5155&vol=71&iss=2&rank=4
5. V. Kotlyarov and A. Minakov, *Riemann–Hilbert problems and the mKdV equation with step initial data: short time behavior of solutions and the nonlinear Gibbs-type phenomenon*, J.Phys.A.: Math. Theor., 2012, Vol. 45, 325201, 17 p.
<http://iopscience.iop.org/1751-8121/45/32/325201/>
4. V. Kotlyarov and A. Minakov, *Step-initial function to the mkdv equation: hyper-elliptic long-time asymptotics of the solution*, Journal of mathematical physics, analysis, geometry, 2012, Vol. 8, N1, P. 38–62.
<http://www.mathnet.ru/links/fd82fc5b40799ebb1df608c94a0e34f0/jmag524.pdf>
3. A. Minakov, *Long-time behavior of the solution to the mKdV equation with step-like initial data*, J.Phys.A.: Math. Theor., 2011, Vol. 44, 085206, 31 p.
<http://iopscience.iop.org/1751-8121/44/8/085206/>
2. A. Minakov, *Asymptotics of rarefaction wave solution to the mKdV equation*, Journal of mathematical physics, analysis, geometry, 2011, Vol. 7, N1, P. 59–86.
<http://www.mathnet.ru/links/1c124addab6ef4524dbc0083b48bdb15/jmag166.pdf>
1. V. Kotlyarov and A. Minakov, *Riemann–Hilbert problem to the modified Korteweg - de Vries equation: Long-time dynamics of the steplike initial data*, Journal of Mathematical Physics, 2010, Vol. 51, 093056.
<http://dx.doi.org/10.1063/1.3470505>

SCHOLARSHIPS AND AWARDS

- | | |
|-----------|---|
| 2015–2018 | SISSA post-doc scholarship. |
| 2013–2015 | my research was supported by the OPVK project "Support of inter-sectoral mobility and quality enhancement of research teams at Czech Technical University in Prague", CZ.1.07/2.3.00/30.0034, sponsored by European Social Fund in the Czech Republic. http://opvk.cvutdecin.cz/ |
| 2012 | Scholarship of the National Academy of Sciences of Ukraine for young Scientists. |
| 2010 | Scholarship of the N. Akhiezer foundation. |
| 2003 | First Degree Diploma at Kharkiv Mathematical Olympiad. |

TEACHING EXPERIENCE

- | | |
|-----------|---|
| 2015–2016 | I have designed and taught a new graduate course "Long-time asymptotics for the Camassa-Holm equation" for the mathematic students at SISSA. https://www.math.sissa.it/course/phd-course/long-time-asymptotics-camassa-holm-equation |
| 2013–2015 | scientific work with PhD students at the Czech Technical University in Prague. |
| 2008–2013 | V.N.Karazin Kharkiv National University, I taught junior level Analysis, Differential Equations, Complex Analysis, Linear Algebra courses. |

SELECTED SEMINAR and CONFERENCE TALKS

20. V International Conference "Analysis and Mathematical Physics", 19-24 June, 2017, Kharkiv, Ukraine (talk).
19. Workshop "Critical Phenomena for Random Matrices and Integrable Systems", 14-15 June, 2017, Chateau de Limelette, Belgium (poster).
18. French-American Conference on Nonlinear Dispersive PDEs, 12-16 June 2017, Marseille, France (poster).
17. Workshop "Asymptotic and computational aspects of complex differential equations", 13-17 February 2017, Pisa, Italy (talk).
16. 27th Nordic Congress of Mathematicians, 16-20 March 2016, Celebrating 100th anniversary of Institut Mittag-Leffler, Stockholm, Sweden (talk).
15. Workshop "Asymptotics in Integrable Systems, Random Matrices and Random Processes and Universality: In honor of Percy Deift's 70th birthday, June 7-11, 2015, Montreal, Canada (poster).
14. Conference on Partial Differential Equations, March 25-30, 2015, Munchen, Germany (talk).
13. Workshop "Computational complex analysis for free surface flows and other applications", April 20-22, 2015, London, Great Britain (poster).
12. Workshop "Modern Applications of Complex Variables: Modeling, Theory and Computation (15w5052)", January 12-16, 2015, Banff, Canada (talk).
11. 7th International Conference on Differential and Functional Differential Equations, August 22-29, 2014, Moscow, Russia (talk).
10. Conference on Partial Differential Equations. May 28 – June 3, 2014, Novacella, Italy (talk).
9. University of Vienna, Mathematical Physics Seminar, March 2014
8. University of Stuttgart, Seminar of Mathematical and Physics Department, February 2014
7. Conference QMATH12: Mathematical Results in Quantum Mechanics. September 10–13, 2013, Berlin, Germany (talk).
6. Conference EQUADIFF 2013. August 26–30, 2013, Prague, Czech Republic. (talk)
5. Conference on "Symmetries of Discrete Systems and Processes". July 15–19, 2013, Decin, Czech Republic (talk).
4. International Conference in honor of Vladimir A. Marchenko's 90th birthday "Spectral Theory and Differential Equations". August 20–24, 2012, Kharkiv, Ukraine (talk).
3. 6th European Congress of Mathematics. July 2–7, 2012, Krakow, Poland (poster).
2. Completely Integrable Systems and Applications - ESF-EMS-ERCOM Conference. July 3–8, 2011, Vienna, Austria (talk).
1. XII International Scientific Krawtchouk Conference. May 15–17, 2008, Kyiv, Ukraine (talk).

COMPUTER SKILLS

Mathematica, C, C++, Java, Javascript, PHP, CSS, MySQL.