Curriculum Vitae of
Alexander (Oleksandr) Minakov

Universite catholiqué de Louvain (UCL)
Institut de Recherche en Mathématique et Physique
Chemin du Cyclotron 2 (bureau b327), B-1348 Louvain-La-Neuve Belgium
E-mail:*minakov.ilt@gmail.com*

RESEARCH INTERESTS

Analysis and Applications, Mathematical Physics: Completely Integrable Systems, Nonlinear Partial Differential Equations, Painlevé 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: Professor 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

Oct 2018 – present.	Postdoc at Universite catholiqué de Louvain, Louvain-la-Neuve, Belgium. Host Researcher: Professor Tom Claeys.
Nov 2015 – Sep 2018.	Postdoc at International School for Advanced Studies (SISSA), Trieste, Italy. Host Researcher: Professor Boris Dubrovin.
May 2013 – Oct 2015.	Postdoc at the Czech Technical University in Prague. Host Researcher: Professor Pavel Exner.
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

2019 Alexander Minakov, *On the solution of the Zakharov-Shabat system, which arises in the analysis of the largest real eigenvalue in the real Ginibre ensemble.* arXiv:1905.03369

2019 Vladimir Kotlyarov, Alexander Minakov, *Dispersive Shock Wave, Generalized Laguerre Polynomials and Asymptotic Solitons of the Focusing Nonlinear Schrödinger Equation.* arXiv:1905.02493

2019 Boris Dubrovin, Alexander Minakov, *On a class of compact perturbations of the special pole-free joint solution of KdV and* P_I^2. arXiv:1901.07470

2018 Rustem R. Aydagulov, Alexander A. Minakov, *Initial-Boundary Value Problem for Stimulated Raman Scattering Model: Solvability of Whitham Type System of Equations Arising in Long-Time Asymptotic Analysis,* SIGMA 14 (2018), 119, 19 pages
doi:10.3842/SIGMA.2018.119 arXiv:1805.05153

2017 Marco Bertola and Alexander Minakov, *Laguerre polynomials and transitional asymptotics of the modified Korteweg-de Vries equation for step-like initial data,* Analysis and Mathematical Physics.
doi:10.1007/s13324-018-0273-1 arXiv:1711.02362

2016 Alexander Minakov, *Asymptotics of step-like solutions for the Camassa-Holm equation,* Journal of Differential Equations, Volume 261, Issue 11, 2016, Pages 6055-6098.
doi:10.1016/j.jde.2016.08.028 arXiv:1512.04762

2015 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.
doi:10.1088/1751-8113/48/30/305201 arXiv: 1304.1703

2015 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.
doi:10.1016/j.jmaa.2015.03.059 arXiv:1401.6777

2014 P. Exner, A. Minakov, *Curvature-induced bound states in Robin waveguides and their asymptotical properties,* Journal of Mathematical Physics, 2014, Vol. 55, 122101.
doi:10.1063/1.4903184 arXiv:1406.7624

2014 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.
doi:10.4171/PM/1945 arXiv:1312.7293

2012 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.
doi:10.1088/1751-8113/45/32/325201

2012 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`

2011 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.
doi:10.1088/1751-8113/44/8/085206

2011 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`

2010 V. Kotlyarov and A. Minakov, *Riemann–Hilbert problem to the modified Korteveg - de Vries equation: Long-time dynamics of the steplike initial data,* Journal of Mathematical Physics, 2010, Vol. 51, 093056. doi:10.1063/1.3470505 arXiv: 1303.2455

SCHOLARSHIPS AND AWARDS

2018–2020	my research is supported by postdoc scholarship of PRIMA – Partners in Research on Integrable models and Applications. `https://sites.uclouvain.be/eos-prima/`
2015–2018	SISSA postdoc scholarship.
2013–2015	my research was supported by the OPVK project "Support of intersectoral 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 PRESENTATIONS

24. Seminar talk at the Czech Technical University in Prague, May 14, 2019. “On a class of unbounded solutions of the Korteweg-de Vries equation”.

23. Conference: Integrability and Randomness in Mathematical Physics and Geometry, CIRM (Marseille Luminy, France), 8 – 12 April 2019 (poster presentation).

22. Research School: Coulomb Gas, Integrability and Painlevé Equations, CIRM (Marseille Luminy, France), 11 – 15 March 2019 (poster presentation).

21. XIV Brunel – Bielefeld Workshop on RMT, 14 – 15 December 2018 (poster presentation).

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 70^{th} 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, MatLab, Python, R, C, C++, Java.