Curriculum Vitae - Andrei Starinets

Personal Details

Name:	Andrei Olegovich Starinets
Date and place of birth:	29 August 1968, Dnepropetrovsk, Soviet Union
Nationality:	USSR, USA (since 2003), UK (since 2016)
Contact Details:	The Rudolph Peierls Centre for Theoretical Physics University of Oxford, Parks Road, Oxford, OX1 3PU, UK
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Professional Experience

10/2008 - present	Professor of Physics (before 2020 - University Lecturer) Department of Physics, University of Oxford and Fellow, St John's College, Oxford, UK
02/2008 - 08/2008	Member, Institute for Advanced Study, Princeton, USA
09/2007 - 10/2008	STFC Advanced Fellow, School of Physics & Astronomy, University of Southampton, UK
09/2004 - 09/2007	Postdoctoral Research Associate, Perimeter Institute for Theoretical Physics, Canada
02/2002 - 09/2004	Postdoctoral Research Associate, Institute for Nuclear Theory, University of Washington, USA
01/1999 - 05/1999	Visiting Scholar, CERN (European Center for Nuclear Research)
1991 - 1994	Student Research Associate, Steklov Mathematical Institute, Russian Academy of Sciences

Education

09/24/2001	PhD in Theoretical Physics, Department of Physics, New York University Thesis: *"Etudes on 1/N"*, advisors M. Porrati and A. Sokal
05/1994	Cand. Sci. in Theoretical Physics, Moscow State University, Moscow, Russian Federation Thesis: *"Effective potentials in quantum field theory at finite temperature and density"*, advisors V.Ch. Zhukovsky and A.S. Vshivtsev
01/1991	Diploma *summa cum laude* in Physics, Moscow State University, Moscow, USSR

Fellowships, Grants and Awards

2012 - 2017	European Research Council "Consolidator" Grant (€1.5M for 5 years)
2011	Maxwell Medal and Prize, UK Institute of Physics
2007 - 2012	STFC Advanced Fellowship, UK
1994 - 1997	MacCracken and Meyer Fellowships, New York University
1993	Research Grant of the Russian Fund for Fundamental Research
1991	III Prize in Diploma Thesis Competition, Moscow State University
1989 - 1991	I.V.Kurchatov Fellowship, Moscow State University
1988 - 1989	R.V.Khokhlov Fellowship, Moscow State University
1985	USSR Ministry of Education Gold Medal for Academic Excellence

Academic Service

07/2017	Co-organiser, workshop "Canterburry Tales of Hot QFTs in LHC Era", St John's college, Oxford
07/2016	Co-organiser, workshop "Non-equilibrium Physics and Holography", St John's college, Oxford
01/2012	Co-organiser, UK-Japan Winter School in Mathematical Physics, Oxford University
2009-present	Examiner and member of PhD defense committees in various countries
2009-present	Member of various committees, St John's College, Oxford
2009 - present	Referee for National Science Foundations and Research Councils of USA, Japan, Netherlands, Israel, Germany, Russian Federation
2003 - present	Referee for *Phys.Rev.D*, *Phys.Rev.Lett.*, *J. High Energy Phys.*, *Phys.Lett.B*, *Nucl. Phys. B*, *Science*, *Physics Today*, *Journal of Physics A*, *Classical and Quantum Gravity*, *New Journal of Physics*, *Annals of Physics*, *Foundations of Physics*
05/2006	Co-organizer of the workshop "Exotic States of hot and dense matter and their dual description", Perimeter Institute for Theoretical Physics, Canada
2006	Chair, Perimeter Institute for Theoretical Physics Library Committee
2005-2006	Member, Perimeter Institute for Theoretical Physics PASCOS and Library Committees

Publication Record (INSPIRE database)

Total number of papers	45
Total number of citations	approximately 15,200
Hirsch Index	31
TOPCITE50+ papers	29

Teaching Experience

10/2008 - present	Physics Tutorial Fellow at St John's College, Oxford. Weekly tutorials for the 3rd year undergraduate students in nuclear physics, special and general relativity (6 contact hours per week). Lecturer for General Relativity, Quantum Field Theory, Advanced Quantum Mechanics undergraduate courses and "Topics in Gauge-String Duality" MMathPhys course at the Department of Physics. Supervisor of MMathPhys course dissertations (2-3 per year). Advisor for 7 PhD students (1 current). College advisor for graduate and undergraduate physics students.
07/2019	Lecturer at MITP Summer School, University of Mainz, Germany
06/2019	Lecturer at TÜBİTAK-TBAE Summer School, Gebze, Turkey
03-05/2019	Lecture course at Moscow State University, Moscow, Russia
09/2015	Lecturer at Corfu Summer School, Corfu, Greece
03/2014	Lecturer at Perimeter Scholars International program, Perimeter Institute, Waterloo, Canada
09/2013	Lecturer at the Summer School and Workshop on the Standard Model and Beyond, Corfu, Greece
06/2013	Lecturer at Sao Paulo International School "Non-perturbative QCD", SAIFR, Sao Paulo, Brazil
04/2013	Lecturer at Erasmus Intensive Program "Non-Perturbative Quantum Field Theory", University of Crete, Greece
03/2011	Lecturer at the 27th Nordic Network meeting on "Strings, Fields and Branes", Niels Bohr Institute, Copenhagen, Denmark
09/2009	Lecturer at the 5th Aegean Summer School "From Gravity to Thermal Field Theories: the AdS/CFT correspondence"
03/2008	Lecturer at École de Physique Les Houches Spring School "Hadronic collisions at the LHC and QCD at high density" on "Methods of gauge/gravity duality in thermal field theory"
09/2007 - 01/2008	University of Southampton: lecturer for the graduate course "Introduction to Quantum Field Theory", instructor for problem-solving classes in undergraduate courses "Introduction to Mathematical Methods" and "Physics of Waves", supervisor of 3 undergraduate dissertations, supervisor of the"Seminars" undergraduate course, deputy coordinator for undergraduate courses
08/2006	Lecturer at Summer School on Strings, Gravity and Cosmology at the University of British Columbia, Vancouver, Canada, on "Introduction to AdS/CFT Correspondence"
1997 - 2000	New York University Teaching Assistant for undergraduate (General Physics, Physics for Scientists and Engineers) and graduate (Dynamics) courses, including competitive Summer TA appointments in 1998, 1999 and 2000 Private tutoring (advanced calculus, undergraduate physics)
1992	Teaching Assistant and Assistant Examiner for undergraduate Electrodynamics at the Department of Mathematics and Mechanics, Moscow State University
1993 - 1994	Lecturer for prospective Moscow State University physics/math students

Supervision of postdocs and students

2017-2018	Liam Gladden, graduate student
2017-2018	Petar Tadić, MMathPhys student (currently a postdoc at U.Edinburgh)
2014-2017	Tomas Andrade, postdoctoral researcher
2014-2016	Andrej Ficnar, postdoctoral researcher
2014-2017	Chris Eling, postdoctoral researcher
2013-2016	Ville Keranen, postdoctoral researcher
2015-2018	Nikola Gushterov, graduate student (co-supervised with Dr A.O'Bannon)
2013-2017	Philipp Kleinert, graduate student
2013-2017	Jonas Probst, graduate student
2010-2014	Sašo Grozdanov, graduate student (currently a faculty member at U.Edinburgh and U.Ljubljana)
2009-2013	Nikolaos Kaplis, graduate student
2008-2012	Richard Davison, graduate student (currently a faculty member at Heriot-Watt U., Edinburgh)
2014	Robert Pisarczyk, MPhys student project supervision (jointly with Dr. A.O'Bannon)
2013	Stanislav Zavjalov, MPhys student project supervision
2011	Jakub Sikorowski, MPhys student project supervision

Media Reviews

2011	Z. Merali, "String theory finds a bench mate?", Nature, vol. 478, 2011
2010	C.V. Johnson and P.Steinberg, "What black holes teach about strongly coupled particles?", Physics Today, vol. 63, n.5, 2010
2005	S. Blau, "A string-theory calculation of viscosity could have surprising applications", Physics Today, vol. 58, n.5, 2005
2005	J. Hogan, "Exotic black holes spawn new universal law", New Scientist, March 2005

Conferences, Workshops and other professional activities

07/2019	Lecturer at MITP Summer School, University of Mainz, Germany
06/2019	Lecturer at TÜBİTAK-TBAE Summer School, Gebze, Turkey
03-05/2019	Lecture course at Moscow State University, Moscow, Russia
09/2018	Invited participant, "Bounding transport and chaos in condensed matter and holography", NORDITA program, Stockholm, Sweden
05/2018	Invited participant, "Integrable and chaotic quantum dynamics: from holography to lattice" workshop, Lake Bled, Slovenia
04/2018	Invited participant, "Fire and ice: Hot QCD meets cold and dense matter" workshop, Saariselkä, Finland
10/2016	Invited participant, Mainz Institute for Theoretical Physics workshop "Relativistic Hydrodynamics: Theory and Modern Applications", Mainz, Germany

09/2015 Lecturer, Corfu Summer School, Corfu, Greece

08/2015 Invited participant, Institute for Nuclear Theory program "Equilibration Mechanisms in Weakly and Strongly Coupled Quantum Field Theory", Seattle, USA

04/2015 Invited participant, Galileo Galilei Institute program, "Holographic Methods for Strongly Coupled Systems Workshop", Florence, Italy

03/2014 Lecturer at Perimeter Scholars International program, Perimeter Institute, Waterloo, Canada

09/2013 Lecturer, Summer School and Workshop on the Standard Model and Beyond, Corfu, Greece

06/2013 Lecturer, Sao Paulo International School "Non-perturbative QCD", SAIFR, Sao Paulo, Brazil

04/2013 Lecturer, Erasmus Intensive Program "Non-Perturbative Quantum Field Theory", University of Crete, Greece

06/2012 Invited participant, "HATCH" holography workshop, INR RAS, Moscow, Russia

04/2012 Invited participant, Institute for Nuclear Theory program "Gauge Field Dynamics In and Out of Equilibrium", Seattle, USA

01/2012 Invited participant, workshop on "Holographic Fluids", Amsterdam, Netherlands

11/2011 Invited talk at Paris meeting on "Holography at Finite Density", Paris, France

09/2011 Invited participant, KITP Program "Holographic Duality and Condensed Matter Physics", Santa-Barbara, USA

07/2011 Invited talk at "Numerical Relativity beyond Astrophysics" workshop, Edinburgh, UK

04/2011 Invited talk at Nuclear and Particle Physics Divisional Conference, University of Glasgow, UK

03/2011 Lecturer, 27th Nordic Meeting on Strings, Fields and Branes, Copenhagen, Denmark

12/2010 Invited talk at the Annual Theory Meeting, Durham, UK

04/2010 Visiting professor, École Normale Supérieure, Paris, France

11/2009 Invited talks (plenary and sectional) at XII Mexican conference on Particles and Fields, Mazatlan, Mexico

09/2009 Lecturer, 5th Aegean Summer School "From Gravity to Thermal Field Theories: the AdS/CFT correspondence", Milos Island, Greece

08/2009 Invited talk at Bogoliubov Centennial Conference, Dubna, Russia

08/2009 Invited talk at XIII Lomonosov International Conference, Moscow, Russia

07/2009 Invited participant, KITP Program "Quantum Criticality and the AdS/CFT Correspondence", Santa-Barbara, USA

07/2009 Invited plenary talk at PASCOS 2009 Conference, Hamburg, Germany

04/2009 Invited talk at "New Ideas in Hadronization" workshop, Durham, UK

08/2008 Invited talk at "Strings-2008" conference, CERN, Switzerland

03/2008 Lecturer, Les Houches Spring School "Hadronic collisions at the LHC and QCD at high density", France

02/2008 Invited participant, KITP Program and conference "Nonequilibrium Dynamics in Particle Physics and Cosmology", Santa-Barbara, USA

11/2007 Invited talk at "Fundamental Physics in the UK" workshop, London, UK

05/2007 Invited talk at Solvay workshop "Gauge theories, strings and geometry", Brussels

08/2006 Invited talk at the 38th International Symposium Ahrenshoop on the Theory of Elementary Particles, Akademie Berlin-Schmöckwitz, Germany

08/2006 Lecturer, Summer School on Strings, Gravity and Cosmology, University of British Columbia, Vancouver, Canada

07/2006 Invited talk at the "Hadrons and Strings" workshop, ECT*, Trento, Italy

07/2006 Invited talk at the "QCD and String Theory" Conference, Ringberg Castle, Tegernsee, Germany

07/2006 "Strings-2006" International conference, Beijing, China, participant

05/2006 Invited talk at the Strong and Electroweak Matter (SEWM-2006) Conference, Brookhaven National Laboratory, Upton, USA

03/2006 Invited talk at the Great Lakes String Conference, MCTP, Ann Arbor, USA

02/2006 Invited speaker at the Workshop on Gravitational Aspects of Strings and Branes, Santiago de Compostela, Spain

08/2005 Invited talk at Workshop on Quark-Gluon Plasma Thermalization, Vienna, Austria

08/2005 Invited talk at "Quark Matter-2005" International conference, Budapest, Hungary

07/2005 Invited talk at "Strings-2005" conference, Toronto, Canada

12/2004 "QCD and String Theory" program, KITP, Santa-Barbara, invited participant

09/2004 "COSMO-2004" International conference, Toronto, Canada, participant

07/2004 Invited talk at Trento Workshop on Hadrons and Strings, Trento, Italy

06/2004 "Strings-2004" International conference, Paris, France, participant

04/2004 Invited talk at Workshop on Deconfinement in Nucleus-Nucleus Collisions, Trento, Italy

11/2003 Pacific Northwest String Seminar, UBC, Vancouver, Canada, participant

07/2003 "Strings-2003" International Conference, Kyoto, Japan, participant

02/2003 "QCD and String Theory" Workshop, INT, Seattle, participant

07/2002 Strings-2002 International Conference, Cambridge, UK, participant

06/2001	TASI-2001 "Strings, branes and Extra Dimensions", Boulder, USA, invited participant
05/1998	Harvard Spring School on String Theory, participant
01/1997	XIV Jerusalem Winter School in Theoretical Physics on Dualities and Symmetries, invited participant
09/1993	Talk at V Lomonosov conference on elementary particle physics, Moscow
02/1992	Talk at the Annual meeting of the High-Energy Division of the Russian Academy of Sciences, ITEP, Moscow

Publications

1. L. Gladden, V. Ivo, P. Kovtun and A. O. Starinets, "Instability in $\mathcal{N} = 4$ supersymmetric Yang-Mills theory at finite density," [arXiv:2412.12353 [hep-th]].

2. S. Grozdanov, A. O. Starinets and P. Tadić, "Hydrodynamic dispersion relations at finite coupling," **J.High Energy Phys. 06**, 180 (2021) [arXiv:2104.11035 [hep-th]].

3. S. Grozdanov, P. K. Kovtun, A. O. Starinets and P. Tadić, "The complex life of hydrodynamic modes," **J.High Energy Phys. 11**, 097 (2019) [arXiv:1904.12862 [hep-th]].

4. S. Grozdanov, P. K. Kovtun, A. O. Starinets and P. Tadić, "Convergence of the Gradient Expansion in Hydrodynamics," **Phys. Rev. Lett. 122**, no. 25, 251601 (2019) [arXiv:1904.01018 [hep-th]].

5. S. Grozdanov and A. O. Starinets, "Adding new branches to the "Christmas tree" of the quasinormal spectrum of black branes," **J. High Energy Phys. 1703**, **1904**, 080 (2019) [arXiv:1812.09288 [hep-th]].

6. J. Casalderrey-Solana, S. Grozdanov and A. O. Starinets, "Transport peak in thermal spectral function of $\mathcal{N} = 4$ supersymmetric Yang-Mills plasma at intermediate coupling," **Phys. Rev. Lett. 121**, no. 19, 191603 (2018) [arXiv:1806.10997 [hep-th]].

7. S. Grozdanov and A. O. Starinets, "Second-order transport, quasinormal modes and zero-viscosity limit in the Gauss-Bonnet holographic fluid," **J. High Energy Phys. 1703**, 166 (2017) [arXiv:1611.07053 [hep-th]].

8. S. Grozdanov, N. Kaplis and A. O. Starinets, "From strong to weak coupling in holographic models of thermalization," **J. High Energy Phys. 1607**, 151 (2016) [arXiv:1605.02173 [hep-th]].

9. S. Grozdanov and A. O. Starinets, "On the universal identity in second order hydrodynamics," **J. High Energy Phys. 1503**, 007 (2015) [arXiv:1412.5685 [hep-th]].

10. S. Grozdanov and A. O. Starinets, "Zero-viscosity limit in a holographic Gauss-Bonnet liquid," **Theor. Math. Phys. 182**, no. 1, 61 (2015) [**Teor. Mat. Fiz. 182**, no. 1, 76 (2014)].

11. R. A. Davison and A. O. Starinets, "Holographic zero sound at finite temperature," **Phys. Rev. D 85**, 026004 (2012) [arXiv:1109.6343 [hep-th]].

12. E. Berti, V. Cardoso and A. O. Starinets, "Quasinormal modes of black holes and black branes," **Class. Quant. Grav. 26**, 163001 (2009) [arXiv:0905.2975 [gr-qc]].

13. A. O. Starinets, "Quasinormal spectrum and the black hole membrane paradigm," **Phys. Lett. B 670**, 442 (2009) [arXiv:0806.3797 [hep-th]].

14. A. Karch, D. T. Son and A. O. Starinets, "Holographic Quantum Liquid," **Phys. Rev. Lett. 102**, 051602 (2009) [arXiv:0806.3796 [hep-th]].

15. R. Baier, P. Romatschke, D. T. Son, A. O. Starinets and M. A. Stephanov, "Relativistic viscous hydrodynamics, conformal invariance, and holography," **J. High Energy Phys. 04**, 100 (2008) [arXiv:0712.2451 [hep-th]].

16. R. C. Myers, A. O. Starinets and R. M. Thomson, "Holographic spectral functions and diffusion constants for fundamental matter," **J. High Energy Phys. 11**, 091 (2007) [arXiv:0706.0162 [hep-th]].

17. D. T. Son and A. O. Starinets, "Viscosity, Black Holes, and Quantum Field theory", **Annual Review of Nuclear and Particle Science**, vol. 57 (2007) [arXiv: 0704.0240 [hep-th]].

18. S. Caron-Huot, P. Kovtun, G. D. Moore, A. Starinets and L. G. Yaffe, "Photon and dilepton production in supersymmetric Yang-Mills plasma," **J. High Energy Phys. 12**, 015 (2006) [arXiv:hep-th/0607237].

19. P. K. Kovtun and A. O. Starinets, "Thermal spectral functions of strongly coupled N = 4 supersymmetric Yang-Mills theory," **Phys. Rev. Lett. 96**, 131601 (2006) [arXiv:hep-th/0602059].

20. D. T. Son and A. O. Starinets, "Hydrodynamics of R-charged black holes", **J. High Energy Phys. 03**, 052 (2006) [hep-th/0601157].

21. A. O. Starinets, "Transport coefficients of strongly coupled gauge theories: Insights from string theory," **Eur. Phys. J. A 29**, 77 (2006) [arXiv:nucl-th/0511073].

22. P. Benincasa, A. Buchel and A. O. Starinets, "Sound waves in strongly coupled non-conformal gauge theory plasma," **Nucl. Phys. B 733**, 160 (2006) [arXiv:hep-th/0507026].

23. P. K. Kovtun and A. O. Starinets, "Quasinormal modes and holography," **Phys. Rev. D 72**, 086009 (2005) [arXiv:hep-th/0506184].

24. A. Parnachev and A. Starinets, "The silence of the little strings," **J. High Energy Phys. 10**, 027 (2005) [arXiv:hep-th/0506144].

25. A. Buchel, J. Liu, and A. O. Starinets, "Coupling constant dependence of the shear viscosity in $\mathcal{N} = 4$ supersymmetric Yang-Mills theory," **Nucl. Phys. B 707**, 56 (2005) [arXiv:hep-th/0406264].

26. P. Kovtun, D. T. Son and A. O. Starinets, "Viscosity in strongly interacting quantum field theories from black hole physics," **Phys. Rev. Lett. 94**, 111601 (2005) [arXiv:hep-th/0405231].

27. P. Kovtun, D. T. Son and A. O. Starinets, "Holography and hydrodynamics: Diffusion on stretched horizons," **J. High Energy Phys. 10**, 064 (2003) [arXiv:hep-th/0309213].

28. A. Nunez and A. O. Starinets, "AdS/CFT correspondence, quasinormal modes, and thermal correlators in N = 4 SYM," **Phys. Rev. D 67**, 124013 (2003) [arXiv:hep-th/0302026].

29. G. Policastro, D. T. Son and A. O. Starinets, "From AdS/CFT correspondence to hydrodynamics. II: Sound waves," **J. High Energy Phys. 12**, 054 (2002) [arXiv:hep-th/0210220].

30. A. O. Starinets, "Quasinormal modes of near extremal black branes," **Phys. Rev. D 66**, 124013 (2002) [arXiv:hep-th/0207133].

31. G. Policastro, D. T. Son and A. O. Starinets, "From AdS/CFT correspondence to hydrodynamics," **J. High Energy Phys. 09**, 043 (2002) [arXiv:hep-th/0205052].

32. D. T. Son and A. O. Starinets, "Minkowski-space correlators in AdS/CFT correspondence: Recipe and applications," **J. High Energy Phys. 09**, 042 (2002) [arXiv:hep-th/0205051].

33. M. Porrati and A. Starinets, "On the graviton self energy in AdS(4)," **Phys. Lett. B 532**, 48 (2002) [arXiv:hep-th/0201261].

34. G. Policastro, D.T. Son and A. Starinets, "The shear viscosity of strongly coupled $\mathcal{N} = 4$ supersymmetric Yang-Mills plasma", **Phys. Rev. Lett. 87**, 081601 (2001) [arXiv:hep-th/0104066].

35. G. Policastro and A. Starinets, "On the absorption by near-extremal black branes", **Nucl. Phys. B 610**, 117 (2001) [arXiv:hep-th/0104065].

36. A. Sokal and A. Starinets, "Pathologies of the large- N limit for RP^{N-1},CP^{N-1}, QP^{N-1} and mixed isovector/isotensor σ-Models," **Nucl. Phys. B 601**, 425 (2001) [arXiv:hep-lat/0011043].

37. M. Porrati and A. Starinets, "On the canonical c-function in 4-d field theories possessing supergravity duals," **Phys. Lett. B 498**, 285 (2001) [hep-th/0009227].

38. M. Porrati and A. Starinets, "Holographic duals of 4D field theories," In D'Hoker, E. (ed.),Phong, D.H. (ed.), Yau, S.T. (ed.): **"Mirror symmetry IV"**, pp. 291-298, [hep-th/0009198].

39. M. Porrati and A. Starinets, "RG fixed points in supergravity duals of 4-d field theory and asymptotically AdS spaces," **Phys. Lett. B454**, 77 (1999) [hep-th/9903085].

40. A. Starinets, "Singleton field theory and Flato-Fronsdal dipole equation," **Lett. Math. Phys. 50**, 283 (1999) [math-ph/9809014].

41. V. Pavlov and A. Starinets, "Phase space geometry for constrained Lagrangian systems", math-ph/9806016; **Theor. Math. Phys. 105**, 1539 (1996).

42. A. O. Starinets, A. S. Vshivtsev and V. C. Zhukovsky, "Color ferromagnetic state in SU(2) gauge theory at finite temperature," **Phys. Lett. B322**, 403 (1994).

43. A. S. Vshivtsev, V. C. Zhukovsky and A. O. Starinets, "The Standard SU(2) x U(1) model in an external magnetic field at finite temperature and nonzero chemical potential," **Z. Phys. C61**, 285 (1994).

44. A. S. Vshivtsev, V. C. Zhukovsky, R. A. Potapov and A. O. Starinets, "Quasiexactly solvable problems in quantum mechanics and the anharmonic oscillator," **Russ. Phys. J. 36**, 161 (1993).

45. A. S. Vshivtsev, V. C. Zhukovsky and A. O. Starinets, "Vacuum polarization due to a non-abelian spherically symmetric chromodynamic field at a finite temperature," **Russ. Phys. J. 35**, 1049 (1992).

46. A. S. Vshivtsev, V. C. Zhukovsky and A. O. Starinets, " Thermal Green's functions of massive scalar particles at finite matter density," **Sov. Phys. J. 34**, 589 (1991).