



Curriculum Vitae

Jonatan Lenells - Born on Dec 16, 1981 - Swedish Citizen

Department of Mathematics
KTH Royal Institute of Technology
100 44 Stockholm, Sweden
Phone: +46 8 790 7251
E-mail: jlenells@kth.se

Education

- Sep 2006 PhD in Mathematics, Lund University, Sweden.
- Mar 2004 Licentiate of Philosophy in Mathematics, Lund University, Sweden.
- Sep 2002 Master of Philosophy in Mathematics, Växjö and Lund Universities, Sweden.
- Jun 2000 High School Graduation, Katedralskolan, Växjö, Sweden.

Employment

- 2021- Professor, Department of Mathematics, KTH Royal Institute of Technology, Sweden.
- 2014-2021 Associate Professor, Department of Mathematics, KTH Royal Institute of Technology, Sweden.
- 2014 Research Fellow (1 month), University of Cambridge, Cambridge, UK.
- 2013 Research Fellow (2 months), University of Cambridge, Cambridge, UK.
- 2012 Research Fellow (2 months), University of Cambridge, Cambridge, UK.
- 2011 Research Fellow (2 months), University of Cambridge, Cambridge, UK.
- 2010-2014 Assistant Professor, Department of Mathematics, Baylor University, USA.
- 2009-2010 Research Fellow, Institut für Angewandte Mathematik, Leibniz Universität Hannover, Germany.
- 2007-2009 Marie Curie Research Fellow, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, Cambridge, UK.
- 2006-2007 Visiting Assistant Professor, Department of Mathematics, University of California, Santa Barbara, USA.
- Fall 2005 Research Fellow (5 months), Mittag-Leffler Institute, Stockholm, Sweden.
- 2003-2006 PhD Student, Department of Mathematics, Lund University, Sweden.
- 1996-2000 Teaching Assistant, Faculty of Engineering, Växjö University, Sweden.

Career breaks

- 2022-2023 9 months full-time parental leave
- 2020-2021 12 months part-time parental leave (7 months full-time)
- 2004-2005 NGO volunteer work & tsunami relief work (6 months), South-East Asia
- 2002-2003 NGO volunteer work (6 months), Asia Pacific

Teaching Experience

- Spring 2023 Discrete Mathematics, SF1679, Department of Mathematics, KTH, Sweden.
- Fall 2022 Calculus in One Variable, SF1625, Department of Mathematics, KTH, Sweden.
- Spring 2022 Advanced Complex Analysis, SF2745, Department of Mathematics, KTH, Sweden.
- Spring 2022 Discrete Mathematics, SF1679, Department of Mathematics, KTH, Sweden.
- Spring 2021 Discrete Mathematics, SF1679, Department of Mathematics, KTH, Sweden.
- Fall 2019 Applied Linear Algebra, SF1675, Department of Mathematics, KTH, Sweden.
- Spring 2019 Introduction to Riemann Surfaces, SF2723, Department of Mathematics, KTH, Sweden.
- Spring 2018 Multivariable Calculus, SF1674, Department of Mathematics, KTH, Sweden.
- Spring 2017 Multivariable Calculus, SF1674, Department of Mathematics, KTH, Sweden.
- Spring 2016 Multivariable Calculus, SF1603, Department of Mathematics, KTH, Sweden.
- Spring 2015 Multivariable Calculus, SF1603, Department of Mathematics, KTH, Sweden.
- Fall 2015 Elliptic Partial Differential Equations and Harmonic Function Theory, PhD course, Department of Mathematics, KTH, Sweden.
- Fall 2015 Differential Equations I, SF1633, Department of Mathematics, KTH, Sweden.
- Spring 2015 Multivariable Calculus, SF1603, Department of Mathematics, KTH, Sweden.
- Fall 2014 Calculus in One Variable, SF1625, Department of Mathematics, KTH, Sweden.
- Fall 2014 Algebra and Geometry, SF1624, Department of Mathematics, KTH, Sweden.
- Spring 2014 Algebraic Topology, Math 5331, Department of Mathematics, Baylor University, USA.
- Spring 2014 Systems Biology, Math 4V90, Department of Mathematics, Baylor University, USA.
- Fall 2013 Topology, Math 5330, Department of Mathematics, Baylor University, USA.
- Fall 2013 Calculus III, Math 2321, Department of Mathematics, Baylor University, USA.
- Spring 2013 Theory of Functions of a Complex Variable, Math 4329, Department of Mathematics, Baylor University, USA.
- Fall 2012 Theory of Functions of a Complex Variable, Math 4329, Department of Mathematics, Baylor University, USA.
- Fall 2012 Calculus II, Math 1322, Department of Mathematics, Baylor University, USA.
- Spring 2012 Theory of Functions of a Complex Variable, Math 4329, Baylor University, USA.
- Fall 2011 Calculus I, Math 1321, Section 1, Department of Mathematics, Baylor University, USA.
- Fall 2011 Calculus I, Math 1321, Section 5, Department of Mathematics, Baylor University, USA.
- Spring 2011 Differential Geometry, Math 5340, Department of Mathematics, Baylor University, USA.
- Fall 2010 Calculus I, Math 1321, Department of Mathematics, Baylor University, USA.
- Spring 2010 Ordinary Differential Equations (taught in German), Institut für Angewandte Mathematik, Leibniz Universität Hannover, Germany.
- Spring 2007 Differential and Integral Calculus, Math 3A, Department of Mathematics, University of California, Santa Barbara, USA.
- Winter 2007 Introduction to Theory of Complex Variables, Math 122B, Department of Mathematics, University of California, Santa Barbara, USA.
- Winter 2007 Differential and Integral Calculus, Math 3A, Department of Mathematics, University of California, Santa Barbara, USA.
- Fall 2006 Introduction to Theory of Complex Variables, Math 122A, Department of Mathematics, University of California, Santa Barbara, USA.

Grants

- 2022-2025 Principal Investigator for Grant No. 2021-03877 awarded by the Swedish Research Council. Total amount: SEK 3,800,000
- 2021-2023 Co-applicant for a grant from Olle Engkvists Stiftelse, Sweden. Total amount: SEK 1,600,000
- 2019-2022 Principal Investigator for a grant awarded by the Ruth and Nils-Erik Stenbäck Foundation, Finland. Total amount: EUR 30,000
- 2016-2022 Principal Investigator for Consolidator Grant No. 682537 awarded by the European Research Council. Total amount: EUR 2,000,000

- 2020-2021 Co-applicant for a grant from the Knut and Alice Wallenberg Foundation to host Masatoshi Noumi, Kobe University, as Guest Professor at KTH for the 2020-2021 academic year. Total amount: SEK 1,550,000
- 2016-2021 Principal Investigator for Grant No. 2015-05430 awarded by the Swedish Research Council. Total amount: SEK 3,000,000
- 2016-2019 Principal Investigator for a grant awarded by the Göran Gustafsson Foundation, Sweden. Total amount: SEK 2,500,000

PhD Students

Daniel Eriksson (2023-)
 Samuel Fromm (2016-2021)
 Julian Mauersberger (2016-2020)
 Zhao Yang (2011-2015)

Postdocs

Malin Palö Forsström (2019-2022)
 Julien Roussillon (2019-2022)
 Bjorn Berntson (2018-2021)
 Christophe Charlier (2017-2021)
 Elliot Blackstone (2019-2021)
 Ronald Quirchmayr (2017-2021)
 Jae Min Lee (2018-2021)
 Long Pei (2017- 2019)
 Lin Huang (2016-2018)
 Dengshan Wang (2017-2018)
 Lynnyngs Kelly Arruda (2015-2016)

Editorial Boards

On the Editorial Board for *Studies in Applied Mathematics*, 2022-present.
 On the Editorial Board for *International Mathematics Research Notices (IMRN)*, 2010-present.
 On the Editorial Board for *Journal of Mathematical Analysis and Applications (JMAA)*, 2015-2019.
 On the Editorial Board for *The Scientific World Journal*, 2013-present.
 On the Editorial Board for *JSM Mathematics & Statistics*, 2014-present.
 On the Editorial Board for *Open Engineering*, 2014-present.
 On the Editorial Board for *International Journal of Advanced Astronomy*, 2015-present.
 On the Editorial Board for *Chinese Journal of Mathematics*, 2013.

Awards and Honors

March 2024 Top Downloaded Article, Proceedings of the London Mathematical society.
 May 2018 Voted "Teacher of the Year" for 2018 by the engineering physics students at KTH Royal Institute of Technology
 Feb 2018 Selected as "IOP Outstanding Reviewer" for 2017
 May 2017 Awarded "A Feather in your Cap" for important teaching contributions to the engineering physics program at KTH Royal Institute of Technology
 Dec 2016 Selected as "Outstanding Reviewer" for Journal of Differential Equations
 Aug 2015 Voted "Teacher of the Year" for 2015 by the engineering and education students at KTH Royal Institute of Technology

- June 2015 Awarded the Wallenberg Prize in Mathematics for 2015—a prize awarded to one or two mathematicians each year by the Wallenberg Foundation in Sweden
- May 2015 Voted “Teacher of the Year” for 2015 by the engineering physics students at KTH Royal Institute of Technology
- Mar 2015 Awarded “Göran Gustafsson’s big prize for young researchers” for 2015
- Jan 2015 Awarded the inaugural James S.W. Wong JMAA Prize for 2015—a biennial prize administered by the American Mathematical Society
- April 2006 Awarded a Wallenberg stipend
- June 2000 Awards received from Växjö Katedralskola’s stipend funds 1,2, and 3
- June 2000 Award received from “1943 års jubileumsfond” for outstanding performance in mathematics

Fully Reviewed Articles

1. C. Charlier and J. Lenells, The soliton resolution conjecture for the Boussinesq equation, *J. Math. Pures Appl.*, to appear, arXiv:2303.10485, 43pp.
2. C. Charlier and J. Lenells, Boussinesq’s equation for water waves: asymptotics in Sector I, *Adv. Nonlinear Anal.*, to appear, arXiv:2303.01232, 29pp.
3. S. Fromm, J. Lenells, and R. Quirchmayr, The defocusing nonlinear Schrödinger equation with step-like oscillatory initial data, *Adv. Diff. Eq.*, to appear, arXiv:2104.03714, 51pp.
4. Y. Ameur, C. Charlier, J. Cronvall, and J. Lenells, Disk counting statistics near hard edges of random normal matrices: the multi-component regime, *Adv. Math.* **441** (2024), 109549, 55pp.
5. J. Lenells and J. Roussillon, Non-polynomial q-Askey scheme: integral representations, eigenfunction properties, and polynomial limits, *Constr. Approx.*, to appear, arXiv:2105.10896, 38pp.
6. C. Charlier and J. Lenells, Boussinesq’s equation for water waves: asymptotics in sector V, *SIAM J. Math. Anal.* **56** (2024), 4104–4142.
7. E. Blackstone, C. Charlier, and J. Lenells, Toeplitz determinants with a one-cut regular potential and Fisher–Hartwig singularities I. Equilibrium measure supported on the unit circle, *Proc. Roy. Soc. Edinburgh A: Mathematics*, to appear, arXiv:2212.06763, 33pp.
8. C. Charlier and J. Lenells, Miura transformation for the “good” Boussinesq equation, *Stud. Appl. Math.* **152** (2024), 73–110.
9. Y. Ameur, C. Charlier, J. Cronvall, and J. Lenells, Exponential moments for disk counting statistics at the hard edge of random normal matrices, *J. Spectral Theory*, to appear, arXiv:2207.11092, 40pp.
10. A. S. Fokas, K. Kalimeris, and J. Lenells, A novel difference-integral equation satisfied asymptotically by the Riemann zeta function, *Chaos, Fractals and Complexity*, COSA-Net 2022, Springer Proceedings in Complexity (2023), 319–332.
11. B. K. Berntson, E. Langmann, and J. Lenells, Elliptic soliton solutions of the spin non-chiral intermediate long-wave equation, *Lett. Math. Phys.* **113** (2023), Article number 61, 42pp.
12. C. Charlier and J. Lenells, Exponential moments for disk counting statistics of random normal matrices in the critical regime, *Nonlinearity* **36** (2023), 1593–1616.
13. C. Charlier and J. Lenells, The hard-to-soft edge transition: exponential moments, central limit theorems and rigidity, *J. Approx. Theory* **285** (2023), 105833, 50pp.
14. M. P. Forsström, J. Lenells, and F. Viklund, Wilson loops in the abelian lattice Higgs model, *Prob. Math. Phys.* **4** (2023), 257–329.
15. J. M. Lee and J. Lenells, The nonlinear Schrödinger equation on the half-line with homogeneous Robin boundary conditions, *Proc. London Math. Soc.* **126** (2023), 334–389.
16. E. Blackstone, C. Charlier, and J. Lenells, The Bessel kernel determinant on large intervals and Birkhoff’s ergodic theorem, *Comm. Pure Appl. Math.* **76** (2023), 3300–3345.
17. C. Charlier, J. Lenells, and D. Wang, The “good” Boussinesq equation: long-time asymptotics, *Analysis & PDE* **16** (2023), 1351–1388.
18. M. P. Forsström, J. Lenells, and F. Viklund, Wilson loops in finite Abelian lattice gauge theories, *Ann. Inst. Henri Poincaré Probab. Stat.* **58** (2022), 2129–2164.
19. B. K. Berntson, E. Langmann, and J. Lenells, Spin generalizations of the Benjamin-Ono equation, *Lett. Math. Phys.* **112** (2022), Article number 50, 45pp.
20. A. Boutet de Monvel, J. Lenells, and D. Shepelsky, The focusing NLS equation with step-like oscillating background: the genus 3 sector, *Comm. Math. Phys.* **390** (2022), 1081–1148.

21. A. S. Fokas and J. Lenells, On the asymptotics to all orders of the Riemann zeta function and of a two-parameter generalization of the Riemann zeta function, *Memoirs of the American Mathematical Society*, Volume **275**, Number 1351, 2022, ISBN 978-1470450984.
22. B. K. Berntson, E. Langmann, and J. Lenells, On the non-chiral intermediate long wave equation, *Nonlinearity* **35** (2022), 4549–4584.
23. B. K. Berntson, E. Langmann, and J. Lenells, On the non-chiral intermediate long wave equation II: periodic case, *Nonlinearity* **35** (2022), 4517–4548.
24. E. Blackstone, C. Charlier, and J. Lenells, Oscillatory asymptotics for the Airy kernel determinant on two intervals, *Int. Math. Res. Not.* **2022** (2022), 2636–2687.
25. C. Charlier and J. Lenells, The "good" Boussinesq equation: a Riemann-Hilbert approach, *Indiana Univ. Math. J.* **71** (2022), 1505–1562.
26. C. Charlier, J. Lenells, and J. Mauersberger, Higher order large gap asymptotics at the hard edge for Muttalib–Borodin ensembles, *Comm. Math. Phys.* **384** (2021), 829–907.
27. J. Lenells and J. Roussillon, The family of confluent Virasoro fusion kernels and a non-polynomial q-Askey scheme, *Adv. Theor. Math. Phys.* **25** (2021), 1597–1650.
28. J. Lenells and R. Quirchmayr, Construction of solutions and asymptotics for the defocusing NLS with periodic boundary data, *J. Diff. Eq.* **304** (2021), 348–374.
29. E. Blackstone, C. Charlier, and J. Lenells, Gap probabilities in the bulk of the Airy process, *Random Matrices Theory Appl.*, (2021) 2250022 (30 pages).
30. C. Charlier and J. Lenells, Long-time asymptotics for an integrable evolution equation with a 3x3 Lax pair, *Physica D* **426** (2021), 132987.
31. A. Boutet de Monvel, J. Lenells, and D. Shepelsky, The focusing NLS equation with step-like oscillating background: scenarios of long-time asymptotics, *Comm. Math. Phys.* **383** (2021), 893–952.
32. A. S. Fokas and J. Lenells, A new approach to integrable evolution equations on the circle, *Proc. Roy. Soc. A*, **477** (2021), 20200605, 28pp.
33. B. Deconinck, A. S. Fokas, and J. Lenells, The implementation of the unified transform to the nonlinear Schrödinger equation with periodic initial conditions. *Lett. Math. Phys.* **111**, Article number 17 (2021).
34. C. Charlier, J. Lenells, and J. Mauersberger, The multiplicative constant for the Meijer-G kernel determinant, *Nonlinearity* **34** (2021), 2837–2877.
35. B. K. Berntson, E. Langmann, and J. Lenells, Nonchiral intermediate long-wave equation and interedge effects in narrow quantum Hall systems, *Phys. Rev. B* **102** (2020), 155308.
36. C. Charlier, M. Duits, A. Kuijlaars, and J. Lenells, A periodic hexagon tiling model and non-Hermitian orthogonal polynomials, *Comm. Math. Phys.* **378** (2020), 401–466.
37. C. Charlier and J. Lenells, Airy and Painlevé asymptotics for the mKdV equation, *J. London Math. Soc.* **101** (2020), 194–225.
38. J. Lenells and J. Roussillon, Confluent conformal blocks of the second kind, *J. High Energ. Phys.* **2020** (2020), article number 133, 42pp.
39. L. Huang and J. Lenells, Asymptotics for the Sasa–Satsuma equation in terms of a modified Painlevé II transcendent, *J. Differential Equations* **268** (2020), 7480–7504.
40. J. L. Bona and J. Lenells, The KdV equation on the half-line: Time-periodicity and mass transport, *SIAM J. Math. Anal.* **52** (2020), 1009–1039.
41. J. Lenells and A. S. Fokas, Linearizable boundary value problems for the elliptic sine-Gordon and the elliptic Ernst equations, *J. Nonlinear Math. Phys.* **27** (2020), 337–356.
42. J. Lenells and J. Mauersberger, The hyperbolic Ernst equation in a triangular domain, *Anal. Math. Phys.* **10** (2020), Paper No. 10, 1–60.
43. J. Lenells and R. Quirchmayr, On the spectral problem associated with the time-periodic nonlinear Schrödinger equation, *Math. Ann.* **377** (2020), 1193–1264.
44. J. Lenells and F. Viklund, Asymptotic analysis of Dotsenko–Fateev integrals, *Ann. Henri Poincaré* **20** (2019), 3799–3848.
45. J. Lenells and F. Viklund, Schramm’s formula and the Green’s function for multiple SLE, *J. Stat. Phys.* **176** (2019), 873–931.
46. J. Lenells and L. Pei, Exact solution of a Neumann boundary value problem for the stationary axisymmetric Einstein equations, *J. Nonlinear Sci.* **29** (2019), 1621–1657.
47. A. Boutet de Monvel, J. Lenells, and D. Shepelsky, Long-time asymptotics for the Degasperis–Procesi equation on the half-line, *Ann. Inst. Fourier (Grenoble)* **69** (2019), 171–230.
48. L. Huang and J. Lenells, Construction of solutions and asymptotics for the sine-Gordon equation in the quarter plane, *J. Integrable Systems* **3** (2018), 1–92.

49. J. Lenells, Matrix Riemann-Hilbert problems with jumps across Carleson contours, *Monatsh. Math.* **186** (2018), 111–152.
50. L. Huang and J. Lenells, Nonlinear Fourier transforms for the sine-Gordon equation in the quarter plane, *J. Differential Equations* **264** (2018), 3445–3499.
51. L. K. Arruda and J. Lenells, Long-time asymptotics for the derivative nonlinear Schrödinger equation on the half-line, *Nonlinearity* **30** (2017), 4141–4172.
52. J. Lenells, The nonlinear steepest descent method for Riemann-Hilbert problems of low regularity, *Indiana Univ. Math. J.* **66** (2017), 1287–1332.
53. J. Lenells, Absence of solitons for the defocusing NLS equation on the half-line, *Lett. Math. Phys.* **106** (2016), 1235–1241.
54. J. Lenells, The nonlinear steepest descent method: Asymptotics for initial-boundary value problems, *SIAM J. Math. Anal.* **48** (2016), 2076–2118.
55. J. Lenells, Nonlinear Fourier transforms and the mKdV equation in the quarter plane, *Stud. Appl. Math.* **136** (2016), 3–63.
56. J. Lenells and A. S. Fokas, The nonlinear Schrödinger equation with t-periodic data: I. Exact results, *Proc. Roy. Soc. A* **471** (2015), 20140925.
57. J. Lenells and A. S. Fokas, The nonlinear Schrödinger equation with t-periodic data: II. Perturbative results, *Proc. Roy. Soc. A* **471** (2015), 20140926.
58. J. Lenells, Admissible boundary values for the defocusing nonlinear Schrödinger equation with asymptotically time-periodic data, *J. Differential Equations* **259** (2015), 5617–5639.
59. J. Lenells, D. Stea, and N. J. Foss, Optimal contracting under adverse selection: The implications of mentalizing, *Contemporary Economics* **9** (2015), 215–232.
60. J. Lenells, The defocusing nonlinear Schrödinger equation with t-periodic data: New exact solutions, *Nonlinear Anal. Real World Appl.* **25** (2015), 31–50.
61. A. S. Fokas and J. Lenells, The Unified Transform for the modified Helmholtz equation in the exterior of a square, in *Unified Transform for Boundary Value Problems: Applications and Advances*, SIAM, 2015, A. S. Fokas and B. Pelloni (eds.), 10pp.
62. J. Lenells and G. Misiolek, Amari-Chentsov connections and their geodesics on homogeneous spaces of diffeomorphism groups, *J. Math. Sci.* **196** (2014), 144–151.
63. A. S. Fokas and J. Lenells, Perturbative and exact results on the Neumann value for the nonlinear Schrödinger equation on the half-line, *J. Phys.: Conf. Ser.* **482** (2014), 012015, 10pp.
64. J. Lenells, The KdV equation on the half-line: The Dirichlet to Neumann map, *J. Phys. A* **46** (2013), 345203.
65. B. Khesin, G. Misiolek, J. Lenells, and S. C. Preston, Curvatures of Sobolev metrics on diffeomorphism groups, *Pure Appl. Math. Q.* **9** (2013), 291–332.
66. J. Greenwald, J. Lenells, V. H. Satheeshkumar, and A. Wang, Gravitational collapse in Horava-Lifshitz theory, *Phys. Rev. D* **88** (2013), 024044.
67. J. Lenells and M. Wunsch, The Hunter-Saxton system and the geodesics on a pseudosphere, *Comm. PDE* **38** (2013), 860–881.
68. J. Lenells and M. Wunsch, On the weakly dissipative Camassa-Holm, Degasperis-Procesi, and Novikov equations, *J. Differential Equations* **255** (2013), 441–448.
69. J. Lenells, Spheres, Kähler geometry and the Hunter-Saxton system, *Proc. Roy. Soc. A* **469** (2013), 20120726.
70. B. Khesin, J. Lenells, G. Misiolek, and S. Preston, Geometry of diffeomorphism groups, complete integrability and geometric statistics, *Geom. Funct. Anal.* **23** (2013), 334–366.
71. A. S. Fokas, J. Lenells, and B. Pelloni, Boundary value problems for the elliptic sine-Gordon equation in a semi-strip, *J. Nonlinear Sci.* **23** (2013), 241–282.
72. R. M. Chen, J. Lenells, Y. Liu, Stability of the mu-Camassa-Holm peakons, *J. Nonlinear Sci.* **23** (2013), 97–112.
73. J. Lenells, The Degasperis-Procesi equation on the half-line, *Nonlinear Analysis* **76** (2013), 122–139.
74. J. Lenells and Z. Yang, A two-component geodesic equation on a space of constant positive curvature, *J. Geom. Phys.* **62** (2012), 1298–1308.
75. A. S. Fokas and J. Lenells, The unified method: I Non-linearizable problems on the half-line, *J. Phys. A: Math. Theor.* **45** (2012), 195201.
76. J. Lenells and A. S. Fokas, The unified method: II NLS on the half-line with t-periodic boundary conditions, *J. Phys. A: Math. Theor.* **45** (2012), 195202.

77. J. Lenells and A. S. Fokas, The unified method: III Non-linearizable problems on the interval, *J. Phys. A: Math. Theor.* **45** (2012), 195203.
78. J. Lenells, Initial-boundary value problems for integrable evolution equations with 3x3 Lax pairs, *Physica D* **241** (2012), 857–875.
79. J. Greenwald, J. Lenells, J. X. Lu, V. H. Satheeshkumar, and A. Wang, Black holes and global structures of spherical spacetimes in Horava-Lifshitz theory, *Phys. Rev. D* **84** (2011), 084040, 25 pp.
80. J. Lenells and A. S. Fokas, Boundary value problems for the stationary axisymmetric Einstein equations: a rotating disc, *Nonlinearity* **24** (2011), 177–206.
81. J. Lenells, Boundary value problems for the stationary axisymmetric Einstein equations: a disk rotating around a black hole, *Commun. Math. Phys.* **304** (2011), 585–635.
82. J. Lenells, An integrable generalization of the sine-Gordon equation on the half-line, *IMA J. Appl. Math.* **76** (2011), 554–572.
83. J. Lenells, The solution of the global relation for the derivative nonlinear Schrödinger equation on the half-line, *Physica D* **240** (2011), 512–525.
84. J. Escher, M. Kohlmann, and J. Lenells, The geometry of the two-component Camassa-Holm and Degasperis-Procesi equations, *J. Geom. Phys.* **61** (2011), 436–452.
85. J. Lenells, Dressing for a novel integrable generalization of the nonlinear Schrödinger equation, *J. Nonlinear Sci.* **20** (2010), 709–722.
86. A. S. Fokas and J. Lenells, Explicit soliton asymptotics for the Korteweg-de Vries equation on the half-line, *Nonlinearity* **23** (2010), 937–976.
87. J. Lenells, G. Misiolek, and F. Tiglay, Integrable evolution equations on spaces of tensor densities and their peakon solutions, *Commun. Math. Phys.* **299** (2010), 129–161.
88. J. Lenells and A. S. Fokas, On a novel integrable generalization of the sine-Gordon equation, *J. Math. Phys.* **51** (2010), 023519.
89. A. Constantin, R. Ivanov, and J. Lenells, Inverse scattering transform for the Degasperis-Procesi equation, *Nonlinearity* **23** (2010), 2559–2575.
90. J. Lenells and A. S. Fokas, An integrable generalization of the nonlinear Schrödinger equation on the half-line and solitons, *Inverse problems*, **25** (2009), 115006.
91. J. Lenells, Exactly solvable model for nonlinear pulse propagation in optical fibers, *Stud. Appl. Math.* **123** (2009), 215–232.
92. T. Dimofte, S. Gukov, J. Lenells, and D. Zagier, Exact results for perturbative Chern-Simons theory with complex gauge group, *Commun. Number Theory Phys.* **3** (2009), 1–81.
93. J. Lenells and O. Lechtenfeld, On the N=2 supersymmetric Camassa-Holm and Hunter-Saxton equations, *J. Math. Phys.* **50** (2009), 012704.
94. J. Lenells and A. S. Fokas, On a novel integrable generalization of the nonlinear Schrödinger equation, *Nonlinearity* **22** (2009), 11–27.
95. J. Lenells, Periodic solitons of an equation for short capillary-gravity waves, *J. Math. Anal. Appl.* **352** (2009), 964–966.
96. J. Lenells, The derivative nonlinear Schrödinger equation on the half-line, *Physica D* **237** (2008), 3008–3019.
97. J. Lenells, A bi-Hamiltonian supersymmetric geodesic equation, *Lett. Math. Phys.* **85** (2008), 55–63.
98. B. Khesin, J. Lenells, and G. Misiolek, Generalized Hunter-Saxton equation and the geometry of the group of circle diffeomorphisms, *Math. Ann.* **342** (2008), 617–656.
99. J. Lenells, Poisson structure of a modified Hunter-Saxton equation, *J. Phys. A: Math. Theor.* **41** (2008), 285207.
100. J. Lenells, The Hunter-Saxton equation: a geometric approach, *SIAM J. Math. Anal.* **40** (2008), 266–277.
101. J. Lenells, Riemannian geometry on the diffeomorphism group of the circle, *Ark. Mat.* **45** (2007), 297–325.
102. J. Lenells, The Hunter-Saxton equation describes the geodesic flow on a sphere, *J. Geom. Phys.* **57** (2007) 2049–2064.
103. J. Lenells, Classification of all travelling-wave solutions for some nonlinear dispersive equations, *Philos. Trans. R. Soc. Lond. Ser. A Math. Phys. Eng. Sci.* **365** (2007), 2291–2298.
104. J. Lenells, Weak geodesic flow and global solutions of the Hunter-Saxton equation, *Discrete Contin. Dyn. Syst.* **18** (2007), 643–656.
105. J. Lenells, Infinite propagation speed of the Camassa-Holm equation, *J. Math. Anal. Appl.* **325** (2007), 1468–1478.

106. J. Lenells, Classification of traveling waves for a class of nonlinear wave equations, *J. Dyn. Diff. Eq.* **18** (2006), 381–391.
107. A. Constantin, B. Kolev, and J. Lenells, Integrability of invariant metrics on the Virasoro group, *Phys. Lett. A* **350** (2006), 75–80.
108. J. Lenells, Traveling waves in compressible elastic rods, *Disc. Cont. Dyn. Sys. B* **6** (2006), 151–168.
109. J. Lenells, Stability for the periodic Camassa-Holm equation, *Math. Scand.* **97** (2005), 188–200.
110. J. Lenells, Traveling wave solutions of the Camassa-Holm equation, *J. Differential Equations* **217** (2005), 393–430.
111. J. Lenells, Traveling wave solutions of the Degasperis-Procesi equation, *J. Math. Anal. Appl.* **306** (2005), 72–82.
112. H. Kalisch and J. Lenells, Numerical study of traveling-wave solutions for the Camassa-Holm equation, *Chaos, Solitons and Fractals* **25** (2005), 287–298.
113. J. Lenells, Conservation laws of the Camassa-Holm equation, *J. Phys. A* **38** (2005), 869–880.
114. J. Lenells, The correspondence between KdV and Camassa-Holm, *Int. Math. Res. Not.* **71** (2004), 3797–3811.
115. J. Lenells, Traveling wave solutions of the Camassa-Holm and Korteweg-de Vries equations, *J. Nonlinear Math. Phys.* **11** (2004), 508–520.
116. J. Lenells, A variational approach to the stability of periodic peakons, *J. Nonlinear Math. Phys.* **11** (2004), 151–163.
117. J. Lenells, Stability of periodic peakons, *Internat. Math. Res. Notices* **10** (2004), 485–499.
118. A. Constantin and J. Lenells, On the inverse scattering approach for an integrable shallow water wave equation, *Phys. Lett. A* **308** (2003), 432–436.
119. A. Constantin and J. Lenells, On the inverse scattering approach to the Camassa-Holm equation, *J. Nonlinear Math. Phys.* **10** (2003), 252–255.
120. J. Lenells, The scattering approach for the Camassa-Holm equation, *J. Nonlinear Math. Phys.* **9** (2002), 389–393.
121. J. Bengtsson, A. Hultgren, J. Lenells, and M. Lenells, Operator interface for a water tank process - a Java programming project, Proceedings of IFAC 99, Beijing, China, 1999.

ArXiv Preprints

1. A. Boutet de Monvel, J. Lenells, and D. Shepelsky, The focusing NLS equation with step-like oscillating background: asymptotics in a transition zone, arXiv:2006.01137, 41pp.
2. C. Charlier and J. Lenells, On Boussinesq's equation for water waves, arXiv:2204.02365, 111pp.
3. M. P. Forsström, J. Lenells, and F. Viklund, Wilson lines in the lattice Higgs model at strong coupling, arXiv:2211.03424, 48pp.
4. B. K. Berntson, E. Langmann, and J. Lenells, Conformal field theory, solitons, and elliptic Calogero--Sutherland models, arXiv:2302.11658, 56pp.
5. C. Charlier and J. Lenells, Direct and inverse scattering for the Boussinesq equation with solitons, arXiv:2302.14593, 37pp.
6. C. Charlier and J. Lenells, Boussinesq's equation for water waves: the soliton resolution conjecture for Sector IV, arXiv:2303.00434, 43pp.
7. C. Charlier and J. Lenells, Balayage of measures: behavior near a corner, arXiv:2403.02964, 19pp.
8. E. Langmann and J. Lenells, Universality of mean-field antiferromagnetic order in an anisotropic 3D Hubbard model at half-filling, arXiv:2403.14768, 39pp.
9. C. Charlier, D. Eriksson, and J. Lenells, Numerical scheme for the solution of the "bad" Boussinesq equation, arXiv:2406.02183, 21pp.
10. J. Lenells and J. Roussillon, Semiclassical limit of a non-polynomial q-Askey scheme, arXiv:2407.03464, 26pp.
11. C. Charlier and J. Lenells, Balayage of measures: behavior near a cusp, arXiv:2408.05487, 30pp.

Teaching and Learning Publications

1. J. Lenells, Att lära som ett barn, in "Matematik ingen åskådarsport", KTH, 2017.

Invited Lectures

- Jan 26, 2024 Seminar talk, Mathematical Physics Seminar, University of Bristol, UK.
- July 4, 2023 Plenary talk, 29th Nordic Congress of Mathematicians with EMS, Aalborg, Denmark.
- Dec 15, 2022 Seminar talk, University of Crete, Greece.
- Nov 22, 2022 Seminar talk, Differential Geometry and General Relativity Seminar, KTH, Sweden.
- Aug 9, 2022 Workshop talk, International Workshop on Integrable Systems, China.
- July 23, 2022 Conference talk, Conference on Dynamical Systems and Complexity, Chania, Crete, Greece.
- Jan 17, 2022 Mathematical Physics Seminar, SISSA, Italy.
- Feb 3, 2021 Virtual Integrable Systems Seminar, hosted by ICMS, Edinburgh, UK.
- Jan 25, 2021 Seminar talk, Beijing Normal University, China.
- Oct 23, 2020 Colloquium talk, University of Texas Rio Grande Valley, USA.
- Sep 9, 2019 Workshop talk, Newton Institute, Cambridge, UK.
- Jan 31, 2019 Seminar in Mathematical Physics, AlbaNova, Stockholm, Sweden.
- Jan 28, 2019 Colloquium Mathematics Sciences, Chalmers and University of Gothenburg, Sweden.
- Nov 20, 2018 Conference talk, Nonlinear Phenomena in Stockholm, Stockholm, Sweden.
- June 27, 2018 Workshop on Fluid Dynamics and Dispersive Equations, Lund, Sweden.
- Mar 28, 2018 Inspirational guest lecture, KTH Royal Institute of Technology, Sweden.
- Nov 8, 2017 Seminar talk, Linnæus University, Växjö, Sweden.
- Aug 8, 2017 Conference talk, Fields Institute, Toronto, Canada.
- June 15, 2017 Plenary talk, Meeting of the Catalan, Spanish, and Swedish Math Societies, Umeå, Sweden.
- June 8, 2017 Research presentation, Scandic Foresta, Lidingö, Sweden.
- Apr 6, 2017 PDE and Mathematical Physics Seminar, University of Zürich, Switzerland.
- Feb 20, 2017 Inspirational guest lecture for Engineering Physics students, KTH, Sweden.
- Dec 6, 2016 Mathematical Colloquium, University of Vienna, Vienna, Austria.
- Nov 1, 2016 Seminar talk, Central University of Finance and Economics, Beijing, China.
- Oct 29, 2016 Seminar talk, Chinese Academy of Sciences, Beijing, China.
- Oct 27, 2016 Seminar talk, Tsinghua University, Beijing, China.
- Aug 31, 2016 Training session for ERC candidates, Swedish Research Council, Sweden.
- May 20, 2016 Teaching and learning seminar, KTH Royal Institute of Technology, Sweden.
- Nov 20, 2015 Conference talk, Swedish Mathematical Society's Fall Meeting, Norrköping.
- Nov 19, 2015 Inspirational guest lecture for high school students, KTH, Sweden.
- Nov 13, 2015 Inspirational guest lecture for high school students, Kungsholmens Västra Gymnasium, Stockholm, Sweden.
- Nov 10, 2015 Docent Research Presentation, KTH Royal Institute of Technology, Sweden.
- Oct 13, 2015 ERC Consolidator Grant Interview Presentation, Brussels, Belgium.
- July 9, 2015 Conference talk, Tsinghua Sanya International Mathematics Forum (TSIMF), Sanya, Hainan, China.
- July 2, 2015 Seminar talk, Fudan University, Shanghai, China.
- July 1, 2015 Seminar talk, Fudan University, Shanghai, China.
- Nov 17, 2014 Invited lecture, Karlstad University, Sweden.
- Oct 29, 2014 Analysis and Dynamical Systems Seminar, KTH, Sweden.
- Aug 11, 2014 Conference talk, SIAM, University of Cambridge, UK.
- July 10, 2014 Conference talk, AIMS, Madrid, Spain.
- July 8, 2014 Conference talk, AIMS, Madrid, Spain.
- June 13, 2014 Colloquium talk, Linköping University, Sweden.
- June 3, 2014 Invited lecture, KTH Royal Institute of Technology, Sweden.
- May 28, 2014 Colloquium talk, Lund University, Sweden.
- May 20, 2014 Workshop talk, Simons Center for Geometry and Physics, USA.
- Mar 21, 2014 Applied Mathematics Seminar, University of Texas at Arlington, USA.

Mar 2, 2014 Conference talk, Texas PDE Conference, University of North Texas, USA.
 Jan 31, 2014 CASPER Seminar, Baylor Research and Innovation Collaborative, USA.
 Jan 14, 2014 PDE, Complex Analysis, and Differential Geometry Seminar, University of Notre Dame, USA.
 Jan 10, 2014 PDE, Complex Analysis, and Differential Geometry Seminar, University of Notre Dame, USA.
 Jan 9, 2014 PDE, Complex Analysis, and Differential Geometry Seminar, University of Notre Dame, USA.
 Sep 28, 2012 Mathematics Colloquium, Texas Christian University, Fort Worth, USA.
 Sep 6, 2012 Workshop talk, Part I, Physikzentrum Bad Honnef, Bad Honnef, Germany.
 Sep 6, 2012 Workshop talk, Part II, Physikzentrum Bad Honnef, Bad Honnef, Germany.
 Jun 1, 2012 Conference talk, ICMS, Edinburgh, Scotland.
 Mar 14, 2012 Workshop talk, Institute for Advanced Study, Princeton, USA.
 Nov 9, 2011 PDE and Analysis Seminar, University of Pittsburgh, USA.
 July 4, 2011 Conference talk, Erwin Schrödinger Institute, Vienna, Austria.
 Jan 27, 2011 Department Seminar, University of Washington, USA.
 Jan 25, 2011 Graduate Seminar, University of Washington, USA.
 Jan 19, 2011 Physics Colloquium, Department of Physics, Baylor University, USA.
 Jan 8, 2011 Conference talk, Joint Mathematics Meeting, New Orleans, USA.
 Nov 5, 2010 Mathematical Physics Seminar, Texas A&M University, USA.
 Oct 29, 2010 Workshop talk, University of Texas at Arlington, USA.
 Jul 2, 2010 Conference talk, Jacobs University, Germany.
 May 12, 2010 Berkeley/Bonn/Paris/Zürich Video Seminar, University of Bonn, Germany.
 Feb 15, 2010 Seminar talk, Baylor University, USA.
 Dec 15, 2009 Seminar talk, University of Zürich, Switzerland.
 Dec 1, 2009 Seminar talk, University of Bonn, Germany.
 Oct 15, 2009 Conference talk, Erwin Schrödinger Institute, Austria.
 Jul 20, 2009 PDE seminar, IMPA, Brazil.
 April 23, 2009 Conference talk, University of Edinburgh, UK.
 Feb 12, 2009 Mathematisches Forschungsinstitut Oberwolfach, Germany.
 Jan 21, 2009 Integrable Systems Seminar, Imperial College London, UK.
 Sep 12, 2008 PDE/Analysis seminar, Department of Mathematics, MIT, USA.
 Sep 10, 2008 Guest lecture, Department of Mathematics, MIT, USA.
 Aug 25, 2008 High Energy Physics Seminar, Caltech, USA.
 Aug 4, 2008 Conference talk, Banach Center, Bedlewo, Poland.
 Apr 1, 2008 Oberseminar, Leibniz Universität Hannover, Germany.
 Mar 14, 2008 Graduate Seminar, DAMTP, Cambridge University, UK.
 Jan 9, 2008 Seminar talk, Trinity College Dublin, Ireland.
 Nov 17, 2006 PDE Seminar, Department of Mathematics, UCSB, USA.
 May 12, 2006 Applied Math Seminar, Stanford University, USA.
 May 11, 2006 PDE Seminar, Department of Mathematics, UC Davis, USA.
 May 2, 2006 PDE Seminar, Department of Mathematics, UCSD, USA.
 Apr 28, 2006 PDE Seminar, Department of Mathematics, UCSB, USA.
 Apr 26, 2006 Seminar talk, Control and Dynamical Systems, Caltech, USA.
 Apr 21, 2006 Seminar talk, Department of Mathematics, UCLA, USA.
 Apr 8, 2006 AMS Central Sectional Meeting, Notre Dame University, USA.
 Nov 1, 2005 Institute Seminar, Institut Mittag-Leffler, Sweden.
 Jun 7, 2004 Conference talk, University of Oslo, Norway.
 Mar 31, 2004 Licentiate Seminar, Lund University, Sweden.
 Mar 12, 2004 PDE Seminar, Brown University, USA.
 Jan 28, 2004 Mathematisches Forschungsinstitut Oberwolfach, Germany.
 Jul 26, 2002 Conference talk, Gregynog Hall, Wales.

Referee Services

Referee services provided for the following journals:

1. Abstract and Applied Analysis
2. Acta Applicanda Mathematicae
3. Acta Mathematica
4. Acta Mathematica Scientia
5. Advanced Nonlinear Studies
6. Advances in Difference Equations
7. Advances in Differential Equations
8. Advances in Mathematics
9. Advances in Mathematical Physics
10. AIMS Mathematics
11. Ain Shams Engineering Journal
12. Analysis and Applications
13. Analysis and Mathematical Physics
14. Analysis & PDE
15. Annals of Mathematical Sciences and Applications
16. Annals of Physics
17. Applicable Analysis
18. Applied Mathematics and Computation
19. Applied Mathematics Letters
20. Asian Journal of Mathematics and Computer Research
21. Axioms
22. BIT Numerical Mathematics
23. Boundary Value Problems
24. British Journal of Applied Science & Technology
25. British Journal of Mathematics & Computer Science
26. Bulletin of the London Mathematical Society
27. Bulletin of the Malaysian Mathematical Sciences Society
28. Calculus of Variations and Partial Differential Equations
29. Canadian Journal of Physics
30. Chaos: An Interdisciplinary Journal of Nonlinear Science
31. Chaos, Solitons & Fractals
32. Chinese Journal of Mathematics
33. Communications in Mathematical Physics
34. Communications in Mathematical Sciences
35. Communications in Nonlinear Science and Numerical Simulation
36. Communications in Theoretical Physics
37. Communications on Pure and Applied Mathematics
38. Complex Variables and Elliptic Equations
39. Comptes Rendus Mathématique
40. Constructive Approximation
41. Differential and Integral Equations
42. Discrete and Continuous Dynamical Systems - Series A
43. Discrete and Continuous Dynamical Systems - Series B
44. Discrete Dynamics in Nature and Society
45. Duke Mathematical Journal
46. Dynamics of Partial Differential Equations
47. East Asian Journal of Applied Mathematics

47. Electronic Journal of Probability
48. Electronic Research Archive
49. Entropy
50. European Journal of Applied Mathematics
51. European Journal of Pure and Applied Mathematics
52. European Physics Letter
53. Far East Journal of Applied Mathematics
54. Frontiers of Mathematics in China
55. Funkcialaj Ekvacioj
56. International Journal of Applied Nonlinear Science
57. International Journal of Bifurcation and Chaos
58. International Journal of Geometric Methods in Modern Physics
59. International Journal of Mathematics
60. International Journal of Nonlinear Sciences and Numerical Simulation
61. International Mathematics Research Notices
62. Inventiones
63. Inverse Problems
64. Jordan Journal of Physics
65. Journal of Applied Mathematics
66. Journal of Applied Mathematics and Computing
67. Journal of Basic and Applied Research International
68. Journal of Differential Equations
69. Journal of Dynamics and Differential Equations
70. Journal of Functional Analysis
71. Journal of Geometric Mechanics
72. Journal of Geometry and Physics
73. Journal of Hyperbolic Differential Equations
74. Journal of Inequalities and Applications
75. Journal of Integrable Systems
76. Journal of Inverse and Ill-Posed Problems
77. Journal of Mathematical Analysis and Applications
78. Journal of Mathematical Physics
79. Journal of Nonlinear Mathematical Physics
80. Journal of Nonlinear Science
81. Journal of Physics A
82. Journal of Scientific Research and Reports
83. Journal of the European Mathematical Society
84. Journal of the London Mathematical Society
85. JSM Mathematics & Statistics
86. Mathematics
87. Mathematical and Computational Applications
88. Mathematical Methods in the Applied Sciences
89. Mathematical Modelling of Natural Phenomena
90. Mathematical Physics, Analysis and Geometry
91. Mathematical Problems in Engineering
92. Mathematische Annalen
93. Mathematische Nachrichten
94. Mathematische Zeitschrift
95. Memoirs of the American Mathematical Society

96. Monatshefte für Mathematik
97. Nonlinearity
98. Nonlinear Analysis
99. Nonlinear Analysis: Modelling and Control
100. Nonlinear Analysis Series A: Theory Methods & Applications
101. Nonlinear Analysis Series B: Real World Applications
102. Nonlinear Differential Equations and Applications
103. Nuclear Physics B
104. Open Mathematics
105. Open Physics
106. Optical and Quantum Electronics
107. Physica D
108. Physica Scripta
109. Physics Letters A
110. Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences
111. Proceedings of the American Mathematical Society
112. Proceedings of the Royal Society A
113. Proceedings of the Royal Society of Edinburgh A
114. Qualitative Theory of Dynamical Systems
115. Reports on Mathematical Physics
116. Royal Society Open Science
117. Science China Mathematics
118. SIAM Journal on Mathematical Analysis
119. SN Applied Sciences
120. SN Partial Differential Equations and Applications
121. Studies in Applied Mathematics
122. Symmetry
123. Symmetry Integrability and Geometry: Methods and Applications
124. The European Physical Journal Plus
125. The Journal of Nonlinear Science and Applications
126. Transactions of Mathematics and Its Applications
127. Quarterly Journal of Mechanics and Applied Mathematics
128. Wave Motion
129. Zeitschrift für Angewandte Mathematik und Physik

Referee services also provided for:

1. Austrian Science Fund
2. International Conference on Physics, Mathematics and Statistics (ICPMS 2018)
3. Netherlands Organization for Scientific Research
4. Israel Science Foundation
5. Research Grants Council of Hong Kong
6. Yale-NUS Research and Grant Administration Office
7. Chinese Academy of Sciences