Vedran Sohinger

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Personal

Born in Zagreb, Croatia 1983. Croatian Citizen.

Language skills

Croatian: native speaker.

English: fluent.

German: *B*2 Goethe Certificate. Grade: 97% (Sehr gut).

French: basic knowledge.

Education

Massachusetts Institute of Technology, Ph.D. in Mathematics, June 2011.

Advisor: Gigliola Staffilani.

Thesis Title: *Bounds on the growth of high Sobolev norms of solutions to Nonlinear Schrödinger equations*.

University of California Berkeley, B.A. in Mathematics with Highest Honors, May 2006.

University of Zagreb, Mathematics Department, Fall 2002–Spring 2003.

Employment

University of Warwick, Associate Professor, September 2020–present.

University of Warwick, Assistant Professor, September 2017–September 2020.

Universität Zürich, Postdoctoral researcher, September 2016–August 2017.

Advisor: Benjamin Schlein.

Eidgenössische Technische Hochschule Zürich, Postdoctoral researcher, September 2014–August 2016.

Advisor: Antti Knowles.

Mathematical Sciences Research Institute, Berkeley, CA, USA, research member, September–October 2015.

University of Pennsylvania, Simons Postdoctoral Fellow, July 2011–June 2014.

Advisors: Philip Gressman and Robert Strain.

Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany, visitor, January–February 2012.

Host: Felix Otto.

Research interests

Nonlinear Dispersive Equations, Many-body quantum problems.

Publications

Papers

(21) *A microscopic derivation of Gibbs measures for the 1D focusing quintic nonlinear Schrödinger equation* (with Andrew Rout), preprint (2023), 61 pages, `https://arxiv.org/abs/2308.06569`.

(20) *Almost sure existence of global solutions for general initial value problems* (with Zied Ammari and Shahnaz Farhat), preprint (2023), 42 pages, `https://arxiv.org/abs/2305.17789`.

(19) *A microscopic derivation of Gibbs measures for the 1D focusing cubic nonlinear Schrödinger equation* (with Andrew Rout), Communications in Partial Differential Equations, **48** (2023), no. 7–8, 1008–1055.

(18) *The Euclidean Φ^4_2 theory as a limit of an interacting Bose gas* (with Jürg Fröhlich, Antti Knowles, and Benjamin Schlein), preprint (2022), 53 pages. `https://arxiv.org/abs/2201.07632`. To appear in the Journal of the European Mathematical Society.

(17) *Gibbs measures as unique KMS equilibrium states of Hamiltonian PDEs* (with Zied Ammari), Revista Matemática Iberoamericana, **39** (2023), no. 1, 29–90.

(16) *Interacting loop ensembles and Bose gases* (with Jürg Fröhlich, Antti Knowles, and Benjamin Schlein), Annales Henri Poincaré, **24** (2023), no. 5, 1439–1503.

(15) *A path-integral analysis of interacting Bose gases and loop gases* (with Jürg Fröhlich, Antti Knowles, and Benjamin Schlein), Journal of Statistical Physics, **180** (2020), no. 1–6, 810–831.

(14) *The mean–field limit of quantum Bose gases at positive temperature* (with Jürg Fröhlich, Antti Knowles, and Benjamin Schlein), Journal of the American Mathematical Society, **35** (2022), no. 4, 955–1030.

(13) *A microscopic derivation of Gibbs measures for nonlinear Schrödinger equations with unbounded interaction potentials,* International Mathematics Research Notices IMRN, **21** (2022), no. 19, 14964–15063.

(12) *Unconditional Uniqueness Results for the Nonlinear Schrödinger Equation* (with Sebastian Herr), Communications in Contemporary Mathematics, **21** (2019), no. 7, 1850058, 33 pp.

(11) *A microscopic derivation of time-dependent correlation functions of the 1D cubic nonlinear Schrödinger equation* (with Jürg Fröhlich, Antti Knowles, and Benjamin Schlein), Advances in Mathematics, **353** (2019), 67–115.

(10) *Gibbs measures of nonlinear Schrödinger equations as limits of many-body quantum states in dimensions $d \leq 3$* (with Jürg Fröhlich, Antti Knowles, and Benjamin Schlein), Communications in Mathematical Physics, **356** (2017), no.3, 883–980.

(9) *The Gross-Pitaevskii hierarchy on general rectangular tori* (with Sebastian Herr), Archive for Rational Mechanics and Analysis, **220** (2016), no. 3, 1119–1158.

(8) *A rigorous derivation of the defocusing nonlinear Schrödinger equation on* $\mathbb{T}^3$ *from the dynamics of many-body quantum systems*, Annales de l'Institut Henri Poincaré C, Analyse Non-Linéaire, **32** (2015), no. 6, 1337–1365.

(7) *Local existence of solutions to Randomized Gross-Pitaevskii hierarchies*, Transactions of the American Mathematical Society, **368** (2016), no. 3, 1759–1835.

(6) *Randomization and the Gross-Pitaevskii hierarchy* (with Gigliola Staffilani), Archive for Rational Mechanics and Analysis, **218** (2015), no. 1, 417–485.

(5) *On the uniqueness of solutions to the 3D periodic Gross-Pitaevskii hierarchy* (with Philip Gressman and Gigliola Staffilani), Journal of Functional Analysis, **266** (2014), no. 7, 4705–4764.

(4) *The Boltzmann equation, Besov spaces, and optimal time decay rates in the whole space* (with Robert Strain), Advances in Mathematics, **261** (2014), no. 20, 274–332.

(3) *Bounds on the growth of high Sobolev norms of solutions to 2D Hartree equations*, Discrete and Continuous Dynamical Systems A, **32** (2012), no. 10, 3733–3771.

(2) *Bounds on the growth of high Sobolev norms of solutions to Nonlinear Schrödinger equations on* $\mathbb{R}$, Indiana University Mathematics Journal, **60** (2011), no. 5, 1487–1516.

(1) *Bounds on the growth of high Sobolev norms of solutions to Nonlinear Schrödinger equations on* S^1, Differential and Integral equations, **34** (2011), no. 7-8, 653–718.

Thesis

Bounds on the growth of high Sobolev norms of solutions to nonlinear Schrödinger equations, Ph.D. Thesis, MIT (2011). Advisor: Gigliola Staffilani.

Research Reports

(5) *The Euclidean* Φ^4_2 *theory as a limit of an interacting Bose gas* (based on joint work with Jürg Fröhlich, Antti Knowles, and Benjamin Schlein), Oberwolfach reports, Vol. **19** (2022), no. 2, 1444-1447.

(4) *Gibbs measures of nonlinear Schrödinger equations as limits of quantum many-body states in dimension* $d \leq 3$. Frontiers in Analysis and probability, 371–382, Springer, Cham, 2020.

(3) *A microscopic derivation of time-dependent correlation functions of the* $1D$ *cubic nonlinear Schrödinger equation* (based on joint work with Jürg Fröhlich, Antti Knowles, and Benjamin Schlein), Oberwolfach Reports, Vol. **15** (2018), no. 2, 1113–1114.

(2) *The Gross-Pitaevskii hierarchy on the three-dimensional torus* (based on joint work with Philip Gressman and Gigliola Staffilani), Oberwolfach Reports, Vol. **9** (2013), no.3, 2360–2365.

(1) *On the uniqueness of solutions to the periodic 3D Gross-Pitaevskii hierarchy* (based on joint work with Gigliola Staffilani), Oberwolfach Reports, Vol. **9** (2012), no. 2, 1622–1629.

Summer School Reports

Evolution Equations at the Swiss Federal Institute of Technology, Zürich, Switzerland
(summer school report written jointly with Dean Baskin and Jacques Smulevici), in CMI Annual Report 2008,

Awards

Nomination for Warwick Award for Teaching Excellence, March 2024.

Nomination for Warwick Award for Tutorial Excellence, March 2024.

EPSRC New Investigator Award (EP/T027975/1), September 2020–August 2023.

Nomination for Warwick Award for Tutorial Excellence, March 2022.

Nomination for Warwick Award for Teaching Excellence, March 2020.

Nomination for Warwick Award for Teaching Excellence, March 2019.

Finalist for ERC Starting Grant, June 2018.

Good Teaching Award, UPenn, Spring 2013.

Good Teaching Award, UPenn, Fall 2011.

Simons Postdoctoral Fellowship, UPenn, Fall 2011-Spring 2014.

Charles and Jennifer Johnson Prize for a paper accepted for publication, MIT, Spring 2011.

MIT Presidential Fellowship, Fall 2006.

Valedictorian, UC Berkeley Mathematics Department, May 2006.

B.A. with Highest Honors, UC Berkeley, May 2006.

Phi Beta Kappa (Liberal Arts and Sciences), May 2006 to present.

Dorothea Klumpke Roberts Prize for Academic Excellence, UC Berkeley, May 2006.

Dean's Honor List, UC Berkeley.

International House Scholarship, UC Berkeley.

William Lowell Putnam Mathematical Competition 2005, Honorable Mention, Individual Rank 27th.

International Mathematical Olympiad 2001 and 2002, Bronze Medal.

Presentations

Invited Talks

Massachusetts Institute of Technology, PDE/Analysis Seminar, April 2, 2024.

London Analysis and Probability Seminar, Imperial College London, February 15, 2024.

Heriot-Watt and University of Edinburgh Joint Analysis Seminar, November 22, 2023.

Recent advances in Bose-Einstein condensation, Technical University Munich, August 31, 2023.

Many-body quantum problems and dispersive PDEs, University of Warwick, June 13, 2023.

15th Meeting Groupe de Recherche, DynQua Quantum Dynamics, University of Rennes, February 3, 2023.

University of Bielefeld, Oberseminar Analysis, January 18, 2023 (via Zoom).

University of Loughborough, Analysis Seminar, December 7, 2022.

Quantissima in the Serenissima IV, Venice, Italy, August 22–26, 2022.

Basque Center for Applied Mathematics and University of the Basque Country, Joint Analysis and PDE Seminar, June 9, 2022.

Oberwolfach workshop on Deterministic Dynamics and Randomness in PDE, May 22, 2022.

Bristol–Queen Mary University London–University of Warwick, Zoom Probability Seminar, February 2, 2022 (via Zoom).

University of Warsaw, Faculty of Physics, Seminar, December 9, 2021 (via Zoom).

Texas A&M University, Nonlinear Partial Differential Equations Seminar, November 30, 2021 (via Zoom).

University of Warwick, Colloquium, November 13, 2020 (via Zoom).

Ludwig-Maximilians-Universität Munich, Oberseminar 'Analysis and Mathematical Physics', July 24, 2020 (via Zoom).

Theoretical and Mathematical Physics in Cergy Paris, Singapore, and Warwick, July 10, 2020 (via Zoom).

Queen Mary University London–University of Warwick, Zoom Probability Seminar, June 3, 2020.

Massachusetts Institute of Technology, PDE/Analysis Seminar, May 5, 2020 (via Zoom).

Workshop: Randomness and PDE, University of Oxford, June 29–July 3, 2019. (CANCELLED)

Winter School: Turbulence in fluids and PDEs, EPFL, Lausanne, January 27–31, 2020.

Quantissima in the Serenissima III, Venice, Italy, August 19–23, 2019.

University of Oxford, Stochastic Analysis Seminar, June 10, 2019.

2nd Warwick-Cergy Meeting, University of Warwick, May 23–24, 2019.

Institut Henri Poincaré, *Séminaire: Problèmes Spectraux en Physique Mathématique*, May 13, 2019.

British Mathematical Colloquium, University of Lancaster, April 10, 2019.

16ème Journée de l'équipe Ananum, Université de Rennes 1, March 28, 2019.

Gran Sasso Quantum Meetings: from many particle systems to quantum fluids, GSSI L'Aquila Italy, November 29, 2018.

Imperial College London, Analysis and PDE Seminar, November 8, 2018.

International workshop on PDEs: Analysis and applications, University of Zagreb, Croatia, June 18, 2018.

1st Warwick-Cergy Meeting, Cergy-Pontoise, France, June 14, 2018.

British Mathematical Colloquium, University of St. Andrews, June 12, 2018.

Oberwolfach Mini-Workshop: *Gibbs Measures for Nonlinear Dispersive Equations*, April 20, 2018.

University of Cambridge, Geometric Analysis and Partial Differential Equations seminar, March 26, 2018.

London Mathematical Society Network on Harmonic Analysis and PDEs, University of Warwick, December 11, 2017.

University of Birmingham, Analysis Seminar, November 28, 2017.

University of Warwick, Probability Seminar, November 15, 2017.

Quantissima in the Serenissima II, Venice, Italy, August 23, 2017.

Frontiers in Analysis and Probability, Strasbourg / Zürich meeting, University of Strasbourg, March 23, 2017.

University of Warwick, Colloquium, January 23, 2017.

University of Birmingham, Colloquium, December 8, 2016.

University of Warwick, Probability Seminar, October 19, 2016.

The 3rd SwissMAP General Meeting, Engelberg, Switzerland, September 13, 2016.

Singularity formation and long-time behavior in dispersive PDEs, University of Bonn, March 16, 2016.

Graduate Probability Seminar, Universität Zürich, December 10, 2015.

University of Bielefeld, Oberseminar Analysis, October 30, 2015.

University of California Berkeley, Analysis Seminar, October 5, 2015.

University of Texas Austin, Analysis Seminar, October 2, 2015.

MSRI five minute introduction talk, MSRI, Berkeley, California, September 2015.

ETH Analysis Seminar, December 9, 2014.

Randomness and Long-Time Dynamics in Nonlinear Evolution Differential Equations, Radcliffe Institute, November 2, 2014.

University of Bielefeld, Oberseminar Analysis, October 20, 2014.

Hausdorff Institute, Workshop on Real Analysis, July 18, 2014.

University of Bielefeld, Bielefeld Stochastics Afternoon, April 16, 2014.

AMS Spring 2014 Sectional Meeting of the American Mathematical Society, Special Session on Stochastics and PDEs, Albuquerque, NM, April 6, 2014.

University of California Los Angeles, Analysis and PDE Seminar, February 21, 2014.

University of Rochester, Colloquium, February 11, 2014.

Eidgenössische Technische Hochschule Zürich, Postdoctoral Interview, January 23, 2014.

Joint Mathematics Meetings, AMS Special Session on Dispersive and Geometric Partial Differential Equations, Baltimore, MD, January 18, 2014.

University of Miami, Colloquium, January 16, 2014.

SIAM Conference on Analysis of Partial Differential Equations, section on Dynamics of Nonlinear Dispersive Wave Equations, Lake Buena Vista, FL, December 7, 2013.

University of Pennsylvania, Analysis Seminar, November 12, 2013.

Oberwolfach workshop on Nonlinear Waves and Dispersive Equations, August 15, 2013.

University of Zagreb, Probability Seminar, July 9, 2013.

Princeton University, Analysis Seminar, February 25, 2013.

University of Zagreb, Probability Seminar, December 18, 2012.

New York University, Analysis Seminar, November 29, 2012.

Massachusetts Institute of Technology, PDE/Analysis Seminar, October 23, 2012.

University of Pennsylvania, Analysis Seminar, October 2, 2012.

AMS 2012 Fall Eastern Sectional Meeting, Special Session on Microlocal Analysis and Nonlinear Evolution Equations, Rochester, NY, September 22, 2012.

University of Texas Austin, 2012/13 Thematic Program on nonlinear Schrödinger equations and Bose gases from a multidisciplinar, integrative perspective, September 17 and September 19, 2012.

Conference in honor of Michael Taylor's 65th birthday, July 19, 2012.

Oberwolfach workshop on Nonlinear Evolution Equations, May 17, 2012.

Johns Hopkins Analysis Seminar, April 30, 2012.

Simons Postdoctoral Fellows Meeting, Stony Brook, April 11, 2012.

Drexel University, Applied Mathematics and PDE Seminar, March 20, 2012.

University of Pennsylvania, Analysis Seminar, March 13, 2012.

SIAM Conference on Analysis of Partial Differential Equations, section Recent Progress on Dispersive Partial Differential Equations, November 14, 2011.

AMS 2011 Fall Western Sectional Meeting, Special Session on Harmonic Analysis and Dispersive Partial Differential Equations, Salt Lake City, October 22, 2011.

Princeton University, Analysis Seminar, October 3, 2011.

SISSA trimester on Nonlinear Hyperbolic PDEs, Dispersive and Transport equations, Trieste, Italy, section on Dispersive equations, July 9, 2011.

University of Pennsylvania, Analysis Seminar, February 8, 2011.

Max Planck Institute for Mathematics in the Sciences, Leipzig, January 14, 2011.

Hausdorff Center for Mathematics, University of Bonn, January 11, 2011.

University of California Los Angeles, Analysis and PDE Seminar, October 22, 2010.

University of North Carolina Chapel Hill, Analysis/PDE Seminar, September 29, 2010.

University of Zagreb, Probability Seminar, June 15, 2010.

SIAM conference on Emerging Topics in Dynamical Systems and PDEs, Barcelona, June 3, 2010.

New York University Analysis Seminar, May 7, 2010.

Brown Department of Applied Mathematics PDE Seminar, March 19, 2010.

Poster presentations

Workshop “Probability and asymptotic analysis in strongly coupled systems”, University of Bonn, January 12, 2015.

Workshop “Scaling limits, rough paths, quantum field theory”, Isaac Newton Institute, Cambridge, September 3–7, 2018.

Expository Talks

ETH and University of Zurich Graduate Colloquium, "What is ... an invariant Gibbs measure", Spring 2017.

UPenn Friday Pizza Seminar, "The nonlinear Schrödinger equation", Spring 2014.

MIT Pure Math Graduate Student Seminar, "Low regularity solutions of nonlinear dispersive equations", Spring 2010 .

MIT Pure Math Graduate Student Seminar, "Counting the number of lattice points in Euclidean balls", Fall 2008.

MIT Applied Math Student Seminar, "Solitary wave solutions to the Nonlinear Schrödinger equation", Spring 2008.

Undergraduate research

"Orbits under wreath products", University of California Berkeley, Subfactor seminar, September 2005. Under the supervision of Vaughan Jones.

Conferences and Workshops

Recent advances in Bose-Einstein condensation, Technical University Munich, August 30–September 1, 2023.

Antha-PDE, University of Warwick, July 24–27, 2023. (Co-organiser)

Many-body quantum problems and dispersive PDEs, University of Warwick, June 12–16, 2023 (Organiser).

15th Meeting Groupe de Recherche, DynQua Quantum Dynamics, University of Rennes, February 1–3, 2023.

Focused workshop on Graphical Models, University of Bristol, September 5–7, 2022.

Quantissima in the Serenissima IV, Venice, Italy, August 22–26, 2022.

Oberwolfach workshop on Deterministic Dynamics and Randomness in PDE, May 22–28, 2022.

International Congress on Mathematical Physics, Geneva, August 2-7, 2021 (As an online participant).

Summer School on Current Topics in Mathematical Physics, Universität Zürich, July 5-9, 2021.

Gran Sasso Quantum Meetings at GSSI: From Equilibrium Phenomena Towards Open Quantum Systems, March 22-26, 2021 (via Zoom).

Theoretical and Mathematical Physics in Cergy Paris, Singapore, and Warwick, July 9-10, 2020 (via Zoom).

Workshop: Randomness and PDE, University of Oxford, June 29–July 30, 2019. (CANCELLED)

Winter School: Turbulence in fluids and PDEs, EPFL, Lausanne, January 27–31, 2020.

Quantissima in the Serenissima III, Venice, Italy, August 19–23, 2019.

2nd Warwick-Cergy Meeting, University of Warwick, May 23–24, 2019.

British Mathematical Colloquium, University of Lancaster, April 8–11, 2019.

Gran Sasso Quantum Meetings: from many particle systems to quantum fluids, GSSI L'Aquila Italy, November 28–December 1, 2018.

Introductory workshop of the programme *Scaling limits, rough paths, quantum field theory*, Isaac Newton Institute, Cambridge, September 3–7, 2018.

International workshop on PDEs: Analysis and applications, University of Zagreb, Croatia, June 17–20, 2018.

1st Warwick-Cergy Meeting, Cergy-Pontoise, France, June 13–14, 2018.

British Mathematical Colloquium, University of St. Andrews, June 11–14, 2018.

Oberwolfach Mini-Workshop: *Gibbs Measures for Nonlinear Dispersive Equations*, April 15–21, 2018. (Organiser)

London Mathematical Society Network on Harmonic Analysis and PDEs, University of Warwick, December 11, 2017.

Quantissima in the Serenissima II, Venice, Italy, August 21–25, 2017.

Oberwolfach workshop on Nonlinear Waves and Dispersive Equations, June 11–17, 2017.

Frontiers in Analysis and Probability, Strasbourg / Zürich meeting, University of Strasbourg, March 23–24, 2017.

Frontiers in Analysis and Probability, Strasbourg / Zürich meeting, Universität Zürich, November 3, 2016.

The 3rd SwissMAP General Meeting, Engelberg, Switzerland, September 11–13, 2016.

Conference in honor of Jürg Fröhlich's 70th birthday, ETH Zürich, July 1, 2016.

Conference in memory of Robert Schrader, ETH Zürich, May 23, 2016.

Swiss Probability Seminar, Universität Zürich, June 6–7, 2016.

Oberwolfach workshop on Nonlinear Evolution Problems, Oberwolfach, Germany, May 29–June 4, 2016.

Singularity formation and long-time behavior in dispersive PDEs, University of Bonn, March 14–18, 2016.

Probability and asymptotic analysis in strongly coupled systems, University of Bonn, January 11–15, 2016.

New Challenges in PDE: Deterministic Dynamics and Randomness in High and Infinite Dimensional Systems, Semester program at the MSRI, Berkeley, CA, USA, September-October 2015.

Geometric non-linear analysis: Conference on the occasion of Michael Struwe's 60th birthday, ETH Zürich, June 8-12, 2015.

Symposium: 50 years of Mathematics at the FIM, ETH Zürich, June 3-8. 2015.

Frontiers in Analysis and Probability, Strasbourg / Zürich meeting, University of Strasbourg, France, February 19-21, 2015.

Workshop on Randomness and Long-Time Dynamics in Nonlinear Evolution Differential Equations, Radcliffe Institute, Cambridge, MA, November 1-3, 2014.

Harmonic Analysis & Partial Differential Equations: Recent & Developments and Future Directions: A conference in honor of C. E, Kenig, University of Chicago, September 19-21, 2014.

Workshop on Real Analysis, part of Trimester on Harmonic Analysis and Partial Differential Equations at the Hausdorff Institute in Bonn, Germany, July 14-18, 2014.

AMS 2014 Spring Western Sectional Meeting, University of New Mexico, Albuquerque, NM, April 5-6, 2014.

Joint Mathematics Meetings, Baltimore, MD, January 15-18, 2014.

SIAM Conference on Analysis of Partial Differential Equations, Lake Buena Vista, FL, December 7-10, 2013.

Oberwolfach workshop on Nonlinear Waves and Dispersive Equations, Oberwolfach, Germany, August 11-17, 2013.

The Global Behavior of Solutions to Critical Nonlinear Wave Equations: A conference in honor of Carlos Kenig, Kansas State University, Manhattan, KS, June 17-21, 2013.

The Sixteenth Rivière-Fabes Symposium on Analysis and PDE, University of Minnesota, April 19-21, 2013.

AMS 2012 Fall Eastern Sectional Meeting, Rochester Institute of Technology, Rochester, NY, September 22-23, 2012.

Partial Differential Equations: Analytic and Geometric Aspects, in honor of Michael Taylor's 65 Birthday, University of North Carolina, Chapel Hill, July 16-20, 2012.

Oberwolfach workshop on Nonlinear Evolution Equations, Oberwolfach, Germany, May 13-19, 2012.

Evolution Equations: A Workshop in Honor of Terence Tao, Northwestern University, May 4-6, 2012.

Simons Foundation Postdoctoral Fellows Meeting, Simons Center for Geometry and Physics, Stony Brook, NY, April 10-13, 2012.

SIAM Conference on Analysis of Partial Differential Equations, San Diego, CA, November 14-18, 2011.

ICERM conference on Boltzmann models in Kinetic theory, ICERM, Brown, Providence, RI, November 7-11, 2011.

AMS 2011 Fall Western Sectional Meeting, Salt Lake City, October 22-23, 2011.

SISSA trimester on Nonlinear Hyperbolic PDEs, Dispersive and Transport equations, Trieste, Italy, section on Dispersive equations, July 7-14, 2011.

The Fourteenth Rivière-Fabes Symposium on Analysis and PDE, University of Minnesota, April 15-17, 2011.

SIAM Conference: *Emerging Topics in Dynamical Systems and PDEs*, Barcelona, Spain, May 31-June 4, 2010.

The Thirteenth Rivière-Fabes Symposium on Analysis and PDE, University of Minnesota, April 23-25, 2010.

Workshop on Nonlinear dispersive and geometric evolution equations: *Singularities and Asymptotics*, Pacific Institute for the Mathematical Sciences, Vancouver, Canada, August 17-28, 2010

Conference *Ondes Non-linéaires et Dispersion*, Institut Henri Poincaré, Paris, France, June 22-26, 2009.

The power of Analysis, Birthday conference for Charles Fefferman, Princeton May 4-8, 2009.

Clay Mathematics Institute Summer School on Evolution Equations, ETH, Zurich, Switzerland June 23-July 18, 2008.

The Eighth International Conference on Harmonic Analysis and Partial Differential Equations, El Escorial, Spain, June 16-20, 2008.

Nonlinear Waves, Conference in honor of Walter Strauss, Brown University, May 8 - 11, 2008.

MIT Women in Mathematics: A Celebration, Massachusetts Institute of Technology, April 12-13, 2008.

Teaching

Courses

At the University of Warwick:

MA4A7 Quantum Mechanics, Autumn 2022, instructor.

MA4A7 Quantum Mechanics, Spring 2022, instructor.

MA4J0 Advanced Real Analysis, Spring 2021, instructor.

MA137 Analysis, Autumn 2020, instructor.

MA4J0 Advanced Real Analysis, Spring 2020, instructor.

MA137 Analysis, Autumn 2019, instructor.

MA4J0 Advanced Real Analysis, Spring 2019, instructor.

MA137 Analysis, Autumn 2018, instructor.

MA4J0 Advanced Real Analysis, Spring 2018, instructor.

At UZH:

Ordinary Differential Equations and Dynamical Systems, Spring 2017, instructor.

Introduction to Nonlinear Dispersive Equations (Master's level), Fall 2016, instructor.

At ETH:

Introduction to Harmonic Analysis (Master's level), Spring 2016, instructor.

Introduction to Harmonic Analysis (Master's level), Spring 2015, instructor.

At UPenn:

Math 240: Calculus III, Fall 2013, instructor.

Math 425: Partial Differential Equations (Undergraduate Level), Spring 2013, instructor.

Math 644: Partial Differential Equations (Graduate Level), Fall 2011, instructor.

At MIT:

18.03: Ordinary Differential Equations, Spring 2011, recitation instructor.

18.152: Introduction to PDE, Fall 2010, grader.

18.155: Differential Analysis, Fall 2010, grader.

18.03: Ordinary Differential Equations, Spring 2010, recitation instructor.

18.02: Multivariable Calculus, Fall 2009, recitation instructor.

18.06: Linear Algebra, Fall 2008, recitation instructor.

18.075: Advanced Calculus for Engineering, Spring 2008, grader.

18.101: Analysis II, Fall 2007, grader.

18.704: Undergraduate Seminar in Algebra and Number Theory, Spring 2007, grader.

Seminar Courses

Undergraduate seminar for Putnam Exam preparation, UPenn, Fall 2012.

Course on Nonlinear Dispersive Equations, Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany, January-February, 2012.

Reading Groups

Reading group on lace expansions, Warwick, Autumn 2022.

Reading group on the mathematics of Bose–Einstein condensation, Warwick, Autumn 2019.

Reading group on the Ising model, Warwick, Spring 2019.

Reading group for MMath and MSc students on nonlinear dispersive PDEs, Warwick, Autumn 2017–Summer 2018.

Student reading group on the use of U and V function spaces in nonlinear dispersive equations, MIT, Spring 2011.

Student reading group on KAM Theory, MIT, Fall 2009.

High school teaching

Olympiad training for high school students in Croatia, 2003–2010.

Mentoring

Diploma thesis advisor for Jerome Dominique Wettstein (Bachelor student at ETH Zürich), under the sponsorship of Michael Struwe (ETH Zürich). Fall 2016–Spring 2017.

Master's thesis advisor for Simone Angeloni (Master's student at ETH Zürich), under the sponsorship of Michael Struwe (ETH Zürich). September 2017–March 2018.

MMath supervisor for Costas Loizou, University of Warwick, October 2017–May 2018.

MSc supervisor for Guopeng Li, University of Warwick, October 2017–September 2018.

MSc supervisor for Peter Hearnshaw, University of Warwick, October 2017–September 2018.

MMath supervisor for Larry Read, University of Warwick, October 2018–May 2019.

PhD supervisor for Andrew Rout, University of Warwick, October 2019–September 2023. (Postdoc at the University of Rennes starting October 2023).

PhD supervisor for Grega Saksida, University of Warwick, October 2022–present (jointly with Daniel Ueltschi).

Seminar organisation

Co-organiser of Bristol–Queen Mary–Warwick zoom probability seminar, together with Jess Jay (Bristol), Benjamin Lees (Bristol), Sasha Sodin (Queen Mary), and Leo Rolla (Warwick), 2021–present.

Committee Work

Member of thesis jury for the PhD Defence of Shahnaz Farhat (University of Rennes), 2023.

Warwick Zeeman Lecturer Hiring Committee, 2022 and 2023.

Second-year physics exam board, 2020–present.

Founding member of the Early Career Researchers Committee, 2020–present.

Chair of the Prize Committee at UPenn in the academic year 2012–2013.

Member of the Prize Committee at UPenn in the academic year 2013–2014.

Member of Ph. D. Thesis Defense Committee for Taisong Jing (UPenn), 2014.

Refereeing Work (including quick opinions)

Zentralblatt Math.

Mathscinet.

Peking Mathematical Journal.

Journal de Mathématiques Pures et Appliquées.

Inventiones Mathematicae.

Communications in Mathematical Physics.

Transactions of the American Mathematical Society.

Journal of Spectral Theory.

Journal of Mathematical Physics.

Proceedings of the Royal Society of Edinburgh A.

Indiana University Mathematics Journal.

Dynamics of Partial Differential Equations.

Probability Theory and Related Fields.

International Mathematics Research Notices.

Annales scientifiques de l'École normale supérieure.

Analysis and PDE.

Journal of the London Mathematical Society.

L'Enseignement Mathématique.

SIAM Journal on Mathematical Analysis.

Annales de l'Institut Henri Poincaré (C), Analyse Non Linéaire.

Discrete and Continuous Dynamical Systems, Series A.

Journal of Mathematical Analysis and its Applications.

Journal of Functional Analysis.

Proceedings of the American Mathematical Society.

Physica D.

Communications in Pure and Applied Analysis.

Journal of Nonlinear Science.

Forum of Mathematics, PI.

Forum of Mathematics, Sigma.

Transactions of the London Mathematical Society.

Mathematics in Engineering.

Nonlinear Analysis.

Journal of Dynamics and Differential Equations.

Membership

London Mathematical Society.

Phi Beta Kappa.

Miscellaneous

Link to Youtube channel: `https://www.youtube.com/channel/UCZ3WFvEvVr4RO3SZlDUswrw`.