CURRICULUM VITAE

Yuzhao Wang

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ACADEMIC POSITIONS:

Sep. 2017-	Lecturer, The University of Birmingham, UK.
2016-2017	Postdoctoral Fellow under the ERC project "ProbDynDispEq" (no. 637995), The University of Edinburgh, UK. Mentor: Tadahiro Oh.
2013-2015	Postdoctoral Fellow, Memorial University of Newfoundland, Canada. Mentor: Jie Xiao.
2013-2015	Associate Professor, North China Electric Power University, Beijing, China.
2010-2012	Assistant Professor, North China Electric Power University, Beijing, China.
Jul. 2014	Visiting member, Hausdorff Research Institute for Mathematics, Germany. Program: Harmonic Analysis and Partial Differential Equations.

EDUCATION:

2010	Ph.D. in Mathematics, Peking University, Beijing, China. Advisors: Baoxiang Wang and Carlos Kenig.
2008-2009	Visiting Ph.D. student in Mathematics, University of Chicago, USA. Advisor: Carlos Kenig.
2005	B.A. in Mathematics (with honours), Jilin University, Changchun, China.

RESEARCH AREAS:

Nonlinear Partial Differential Equations, Harmonic Analysis, and Stochastic Analysis.

LIST OF PUBLICATIONS

1. (with T. Oh, T. Robert) *On the parabolic and hyperbolic Liouville equations* , arXiv:1908.03944.
2. (with T. Oh, T. Robert, P. Sosoe) *Invariant Gibbs dynamics for the dynamical sine-Gordon model*, Proc. Roy. Soc. Edinburgh Sect. A (2020), 17 pages. doi: https://doi.org/10.1017/prm.2020.68
3. (with T. Oh, T. Robert, and P. Sosoe) *On the two-dimensional hyperbolic stochastic sine-Gordon equation*, Stoch. Partial Differ. Equ. Anal. Comput. (2020), 32 pages. https://doi.org/10.1007/s40072-020-00165-8.
4. (with T. Oh, N. Tzvetkov) *Solving the 4NLS with white noise initial data*, to appear in Forum Math. Sigma.
5. (with T. Oh) *On global well-posedness of the modified KdV equation in modulation spaces*, to appear in Discrete Contin. Dyn. Syst. A.
6. (with T. Oh) *Global well-posedness of the one-dimensional cubic nonlinear Schrd̈inger equation in almost critical spaces,* J. Differential Equations (2020). https://doi.org/10.1016/j.jde.2019.12.017.
7. (with T. Oh) *Normal form approach to the one-dimensional periodic cubic nonlinear Schrödinger equation in almost critical Fourier-Lebesgue spaces*, to appear in J. Anal. Math.

8. (with W. Wang) *Liouville-type theorems for the stationary MHD equations in 2D*, Nonlinearity 32 (2019), no. 11, 4483–4505.

9. (with T. Oh, O. Pocovnicu) *On the stochastic nonlinear Schrödinger equations with non-smooth additive noise*, to appear in Kyoto J. Math.

10. (with R. Mosincat, O. Pocovnicu, L. Tolomeo) *Global well-posedness of three-dimensional periodic stochastic nonlinear beam equations*, preprint.

11. (with T. Oh, O. Pocovnicu) *On the stochastic nonlinear Schrödinger equations with non-smooth additive noise*, to appear in Kyoto. J. Math.

12. (with O. Pocovnicu) *An L^p-theory for almost sure local well-posedness of the nonlinear Schrödinger equations*, C. R. Math. Acad. Sci. Paris 356 (2018), no. 6, 637–643.

13. (with T. Oh) *Global well-posedness of the periodic cubic fourth order NLS in negative Sobolev spaces*, Forum Math. Sigma 6 (2018), e5, 80 pp.

14. (with T. Oh) *On the ill-posedness of the cubic nonlinear Schrödinger equation on the circle*, to appear in An. Ştiinţ. Univ. Al. I. Cuza Iaşi. Mat. (N.S.)

15. (with J. Xiao) *A Liouville problem for the stationary fractional Navier-Stokes-Poisson system,* J. Math. Fluid Mech. 20 (2018), no. 2, 485–498.

16. (with Z. Guo, Y. Sire, L. Zhao) *On the energy-critical fractional Schrödinger equation in the radial case,* Dyn. Partial Differ. Equ. 15 (2018), no. 4, 265–282.

17. (with J. Xiao) *Well/ill-posedness for the dissipative Navier-Stokes system in generalized Carleson measure spaces,* Adv. Nonlinear Anal. (2017), https://doi.org/10.1515/anona-2016-0042.

18. (with J. Xiao) *A constructive approach to positive solutions of $\Delta_p u + f(u, \nabla u) \leq 0$ on Riemannian manifolds*, Ann. Inst. H. Poincaré Anal. Non Linéaire 33 (2016), no. 6, 1497–1507.

19. (with J. Xiao) *A uniqueness principle for $u^p \leq (-\Delta)^{\frac{\alpha}{2}} u$ in the Euclidean space,* Commun. Contemp. Math. 18 (2016), no. 6, 1650019, 17 pp.

20. (with Y. Liu, J. Xiao) *Nonnegative solutions of a fractional sub-Laplacian differential inequality on Heisenberg group,* Dyn. Partial Differ. Equ. 12 (2015), no. 4, 379–403.

21. (with J. Xiao) *Homogeneous Campanato-Sobolev classes,* Appl. Comput. Harmon. Anal. 39 (2015), no. 2, 214–247.

22. (with Z. Guo, T. Oh) *Strichartz estimates for Schrödinger equations on irrational tori,* Proc. Lond. Math. Soc. 109 (2014), no. 4, 975–1013.

23. (with Z. Guo) *Improved Strichartz estimates for a class of dispersive equations in the radial case and their applications to nonlinear Schrödinger and wave equations.* J. Anal. Math. 124 (2014), 1–38.

24. (with L. Molinet) *Dispersive limit from the Kawahara to the KdV equation,* J. Differential Equations 255, (2013), 2196–2219.

25. *Periodic nonlinear Schrödinger equation in critical $H^s(\mathbb{T}^n)$ spaces,* SIAM J. Math. Anal. 45, (2013), 1691–1703.

26. *Periodic Cubic Hyperbolic Schrödinger equation on $\mathbb{T}^2$,* J. Funct. Anal. 265 (2013), 424–434.

27. *Local well-posedness for hyperbolic-elliptic Ishimori equation,* J. Differential Equations 252 (2012), 4625–4655.

28. *Nonlinear fourth-order Schrödinger equations with radial data,* Nonlinear Anal. 75 (2012), 2534–2541.

29. *Quadratic dispersive generalized Benjamin-Ono equation,* J. Math. Anal. Appl. 387 (2012), 844–856.

30. Global well-posedness and scattering for derivative Schrödinger equation, Comm. Partial Differential Equations 36 (2011), 1694–1722.

31. (with Z. Guo, L. Peng, B. Wang) *Uniform well-posedness and inviscid limit for the Benjamin-Ono-Burgers equation,* Adv. in Math. 228 (2011), 647–677.

32. (with Z. Guo) *On the well-posedness of the Schrödinger-KdV system,* J. Differential Equations 249 (2010), 2500–2520.

33. *The Cauchy problem for the elliptic-hyperbolic Davey-Stewartson system in Sobolev space,* J. Math. Anal. Appl. 367 (2010), 174–192.

TALKS

- *Invariant Gibbs dynamics for the hyperbolic sine-Gordon and Liouville models*, Stochastic Webinar (Chinese Academy of Sciences), September 2020
- *Stochastic nonlinear waves*, Mathematisches Forschungsinstitut Oberwolfach (MFO) Workshop, Germany, May 2020 (1 week) Postponed due to Cov-19.
- *Stochastic nonlinear waves*, ICMS and University of Edinburgh, June 2020, postponed due to Cov-19.
- *Parabolic and hyperbolic Liouville problem*, Oxford University, February 2020, seminar.
- *Stochastic sine-Gordon and Liouville equations*, University of Science and Technology of China, December 2019, research visit.
- *Stochastic sine-Gordon and Liouville equations*, Dalian University of Technology (DUT), China, November 2019, research visit.
- *Stochastic wave sine-Gordon and Liouville models*, Jinan University, China, December 2019, seminar.
- *Invariance of white noise for the cubic fourth order nonlinear Schrödinger equation*, Analysis Seminar, Cardiff University, UK, Feb. 11, 2019.
- *Invariance measures and dispersive partial differential equations*, Sun Yat-sen Univeristy, Guangzhou, China, Mar. 21, 2018.
- *Invariance of white noise for the cubic fourth order nonlinear Schrödinger equation*, LMS Network on Harmonic Analysis and PDEs, Warwick, UK, Dec. 11, 2017.
- *Invariance of white noise for the cubic fourth order nonlinear Schrödinger equation*, Mathematisches Forschungsinstitut Oberwolfach, Germany, Jun. 13, 2017.
- *Invariance of white noise for the cubic fourth order nonlinear Schrödinger equation*, ICMS, Edinburgh, Jun. 6, 2017.
- *On the deterministic and probabilistic well-posedness of the cubic fourth order NLS on the circle*, University of Birmingham, Feb. 21, 2017.
- *Invariant measure for the periodic PDEs*, University of Science and Technology of China, Oct. 26, 2016.
- *Invariance of white noise for fourth order nonlinear Schrödinger equations*, Beijing Normal University, Oct. 17, 2016.
- *On the deterministic and probabilistic well-posedness of the Cauchy problem of the periodic cubic fourth order NLS*, University of Edinburgh, Sep. 26, 2016.
- *On the well- posedness of the periodic fourth order Schrödinger equation in negative Sobolev spaces*, The University of British Columbia, Mar. 29, 2016.
- *Differential inequalities on manifold*, 2015 Canadian Mathematical Society Summer Metting (Interplay of Convexity and Geometric Analysis), Charlottetown, Jun. 7, 2015.
- *Nonlinear hyperbolic Shcrödinger equations*, 2015 Canadian Mathematical Society Summer Metting (Advances in Nonlinear Partial Differential Equations), Charlottetown, Jun. 6, 2015.
- *Strichartz estimates for hyperbolic Shcrödinger equations on 2-d torus*, Memorial University of Newfoundland, Feb. 6, 2015.
- *Hyperbolic Schrödinger equation on torus*, Harmonic Analysis and Partial Differential Equations, University of Bonn, Hausdorff research institute for Mathematics, Aug. 7, 2014.

REVIEWING EXPERIENCE

- Referee for the Advances in Mathematics
- Referee for the Communication in Mathematical Physics
- Referee for the Electronic Journal of Probability
- Referee for the Journal of Geometric Analysis
- Referee for Mathematische Nachrichten
- Referee for Dynamics of Partial Differential Equations
- Referee for Nonlinear Analysis.
- Referee for Proceedings of the American Mathematical Society.
- Referee for Calculus of Variations and Partial Differential Equations.
- Referee for Discrete and Continuous Dynamical Systems - Series A.
- Referee for Differential and Integral Equations.
- Referee for Analysis & PDE.
- Referee for Journal of Mathematical Analysis and Applications.
- Referee for Science China Mathematics.
- Referee for Canadian Mathematical Bulletin.

TEACHING EXPERIENCE - COURSES TAUGHT

2018 - present: University of Birmingham, UK

Autumn 2020:
- Real Analysis and Calculus II - Sequences and Series.
- Real Analysis and Calculus III - Riemann integral and ODEs.
- Mini-course: Stochastic partial differential equations. (The Chinese University of Hong Kong (Shenzhen).

Autumn 2019:
- Real Analysis and Calculus I - Sequences and Series (two sections).
- Real Analysis and Calculus III - Riemann integral and ODEs (two sections).

Autumn 2018:
- Real Analysis and Calculus II - Sequences and Series (two sections).
- Real Analysis and Calculus III - Riemann integral and ODEs (two sections).

Spring 2018:
- Real Analysis and Calculus I - Sequences and Series.
- Real Analysis and Calculus III - Riemann integral and ODEs.

2016 - 2017: The University of Edinburgh, UK

Spring 17:
- (tutorial) Fundamentals of Pure Mathematics - MATH08064 (two sections).

2013 - 2015: Memorial University of Newfoundland, Canada

Autumn 2014:
- PreCalculus - MATH1090 (two sections).

Spring 2014:
- Calculus - MATH1000 (two sections).

2010 - 2013: North China Electric Power University, China
- Partial Differential Equations (master level course, twice)
- Mathematical Analysis I, II, III (one and a half year long undergraduate course).
- Complex Variables Functions and Integral Transform (undergraduate course, large classes, twice).
- Complex Variables Functions (undergraduate course).
- Measure Theory (master level course).
- Stability Theory of ODEs (master level course)

2005 - 2010: Peking University, China
- Teaching Assistant for Calculus II (for Medical Science students).
- Teaching Assistant for Calculus I (for Medical Science students).