

CURRICULUM VITAE

Yuzhao Wang

School of Mathematics
Waston Building, Room 210
The University of Birmingham
Birmingham, B15 2TT, United Kingdom
e-mail: y.wang.14@bham.ac.uk

ACADEMIC POSITIONS:

- | | |
|-------------------------|--|
| Sep. 2017-
2016-2017 | Lecturer, The University of Birmingham, UK.
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 R. Mosincat, O. Pocovnicu, L. Tolomeo) *Global well-posedness of three-dimensional periodic stochastic nonlinear beam equations*, preprint.
2. (with T. Oh, N. Tzvetkov) *Invariance of the white noise for the cubic fourth order nonlinear Schrödinger equation on the circle*, preprint.
3. (with T. Oh, O. Pocovnicu) *On the stochastic nonlinear Schrödinger equations with non-smooth additive noise*, to appear in *Kyoto. J. Math.*
4. (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.
5. (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.
6. (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.)*
7. (with J. Xiao) *A Liouville problem for the stationary fractional Navier-Stokes-Poisson system*, *J. Math. Fluid Mech.* 20 (2018), no. 2, 485–498.

8. (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.
9. (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>.
10. (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.
11. (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.
12. (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.
13. (with J. Xiao) *Homogeneous Campanato-Sobolev classes*, Appl. Comput. Harmon. Anal. 39 (2015), no. 2, 214–247.
14. (with Z. Guo, T. Oh) *Strichartz estimates for Schrödinger equations on irrational tori*, Proc. Lond. Math. Soc. 109 (2014), no. 4, 975–1013.
15. (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.
16. (with L. Molinet) *Dispersive limit from the Kawahara to the KdV equation*, J. Differential Equations 255, (2013), 2196–2219.
17. *Periodic nonlinear Schrödinger equation in critical $H^s(\mathbb{T}^n)$ spaces*, SIAM J. Math. Anal. 45, (2013), 1691–1703.
18. *Periodic Cubic Hyperbolic Schrödinger equation on \mathbb{T}^2* , J. Funct. Anal. 265 (2013), 424–434.
19. *Local well-posedness for hyperbolic-elliptic Ishimori equation*, J. Differential Equations 252 (2012), 4625–4655.
20. *Nonlinear fourth-order Schrödinger equations with radial data*, Nonlinear Anal. 75 (2012), 2534–2541.
21. *Quadratic dispersive generalized Benjamin-Ono equation*, J. Math. Anal. Appl. 387 (2012), 844–856.
22. *Global well-posedness and scattering for derivative Schrödinger equation*, Comm. Partial Differential Equations 36 (2011), 1694–1722.
23. (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.
24. (with Z. Guo) *On the well-posedness of the Schrödinger-KdV system*, J. Differential Equations 249 (2010), 2500–2520.
25. *The Cauchy problem for the elliptic-hyperbolic Davey-Stewartson system in Sobolev space*, J. Math. Anal. Appl. 367 (2010), 174–192.

WORK IN PROGRESS

26. (with T. Oh) *On the norm inflation with general initial data for the derivative nonlinear Schrödinger equation*, in preparation.
27. (with T. Oh) *Global well-posedness of the cubic fourth order NLS on the real line in negative regularity*, in progress.

TALKS

- *Invariance measures and dispersive partial differential equations*, Sun Yat-sen University, 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 Meeting (Interplay of Convexity and Geometric Analysis), Charlottetown, Jun. 7, 2015.
- *Nonlinear hyperbolic Schrödinger equations*, 2015 Canadian Mathematical Society Summer Meeting (Advances in Nonlinear Partial Differential Equations), Charlottetown, Jun. 6, 2015.
- *Strichartz estimates for hyperbolic Schrödinger 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 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 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).