Fudong Wang, Ph.D.

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Education

2015 – 2021 **Ph.D., Pure and Applied Math, University of South Florida** GPA: 3.84/4.
Dissertation: *Long-time asymptotics for the AKNS hierarchy of MKdV-type equations with defocusing/focusing reductions in some L^2 Sobolev spaces.*
Advisor: *Wen-Xiu Ma*

2011 – 2015 **B.S. Pure and Applied Math, Zhejiang University of Technology** GPA:4.7/5
Thesis: *Painleve analysis to some nonlinear PDEs.*
Advisor: *Shoufeng Shen*

Research Interests

Current Matrix Riemann-Hilbert problem, Inverse scattering method, $\bar{\partial}-$steepest descent method, Asymptotic analysis, Singular integral equations.

Future Orthogonal Polynomial, Random Matrices, Hilbert transform.

Publications

Academic Activities

Conferences

Dec, 2019 International Conference on Nonlinear Mathematical Physics, Zhoushan, Zhejiang, China.

Nov, 2019 AMS Fall Southeastern Sectional Meeting, University of Florida, Gainesville, FL

May, 2019 The 5th International Workshop on Nonlinear and Modern Mathematical Physics, Honolulu, HI.
Presentation: *Long-time asymptotics for the AKNS system.*

Oct, 2018 AMS Fall Central Sectional Meeting, University of Michigan, Ann Arbor, MI (with traveling grant)

Analysis Seminar Talks

Oct, 2020 Asymptotics of oscillatory matrix Riemann-Hilbert problems by dbar-steepest descent method

Integrable system and Random matrix seminar @ University of Michigan

OCT, 2021 xxx

Differential Equations Seminar Talks

Sep, 2020 Derivation of the NLS equation from Maxwell's Equations

Apr, 2020 L^2-bijectivity of scattering and inverse scattering in some Sobolev spaces.

Oct, 2019 $\bar{\partial}$ method and its application to nonlinear evolution equations.

Sep, 2019 Inverse scattering and N-soliton solution for the nonlocal nonlinear Schrödinger equation.

Academic Activities (continued)

Apr, 2019 — Riemann-Hilbert problems for two-component coupled mKdV systems.
Mar, 2019 — Asymptotic solutions of the nonlinear Schrödinger equation based on conservation laws.
Oct, 2018 — The emergence of solitons of the Korteweg-de Vries Equation from sufficiently decaying initial conditions.
Apr, 2018 — Nonlinear steepest descent method for long-time asymptotic for MKdV.
Mar, 2017 — Riemann-Hilbert problems with zeros.

Gradute Math@USF Seminar Talks

May, 2020 — An elementary introduction to Fredholm Determinant.
Mar, 2020 — Introduction to the Riemann-Hilbert Problem in L^p-space.
Oct, 2019 — What is ... inverse scattering?
Sep, 2019 — An Introduction to the Riemann-Hilbert Problems on the real line.
Jun, 2019 — Some fundamental formulas(Plemelj-Privalov) on the Cauchy-type integrals.

Seminar Organizer

2019 – Now — Graduate Math @ USF Seminar, as co-Founder (with Nathan Hayford).
Website: https://usfmath.github.io
Achievements: *Hosted more than 30 seminars.*

Employment History

2021 – Now — **Postdoc,** Department of Mathematics, UCF
2018 – 2021 — **Graduate Teaching Associates,** Department of Mathematics and Statistics, USF
2015 – 2018 — **Graduate Instructional Assistants,** Department of Mathematics and Statistics, USF

Scholarships and Awards

Scholarships

2017, 2019 — **Fred L. and Helen M. Tharp Scholarship**, USF
2015 – now — **Teaching Assistantships**, USF
2012 – 2014 — **The First Prize Scholarship**, ZJUT

Awards

2013 — **Meritorious Winner**, Mathematical Contest In Modeling(MCM)
2012 — **First Prize**, National College Mathematics Competition in Zhejiang Province

Skills

Languages — English, Mandarin Chinese
Coding — Maple, Mathematica, Matlab, Python, C, R, LaTeX, …
Web Dev — Html, css, Hugo, Jekyll, Git

Teaching Experience

2015 – 2018 SMART Lab, ACADEMIC SUCCESS CENTER, USF

As a Grader

- MAC 2281 — ENGINEERING CALCULUS I
- MAP 2302 — DIFFERENTIAL EQUATIONS
- MAC 2282 — ENGINEERING CALCULUS II
- MAC 2312 — CALCULUS II
- MAC 2283 — ENGINEERING CALCULUS III
- COP 4313 — SYMBOLIC COMPUTATIONS IN MATHEMATICS
- MAD 4401 — NUMERICAL ANALYSIS I
- MAA 4212 — INTERMEDIATE ANALYSIS II
- MAP 4341 — INTRODUCTION TO PARTIAL DIFFERENTIAL EQUATIONS

As an Instructor

- MAC 2312 — CALCULUS II
  Course content includes: *Integrals, Techniques of Integration, Applications of Integration, Series.*

References

Wen-Xiu Ma: wma3@usf.edu
Evguenii Rakhmanov: rakhmano@usf.edu
Seung-Yeop Lee: lees3@usf.edu
Dmitry Khavinson: dkhavins@usf.edu