Xiaoqian Xu

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EMPLOYMENT

Postdoctoral Associate, Carnegie Mellon University, Sep 2016-present
Postdoc Fellow, ICERM, Brown University, Jan 2017-Jun 2017

EDUCATION

Ph.D., Mathematics, University of Wisconsin - Madison, May 2016
Advisors: Alexander Kiselev and Andrej Zlatoš
Thesis: *Singularities and mixing in fluid mechanics.*
M.S., Mathematics, University of Wisconsin - Madison, May 2014
B.S., Mathematics (Prof. Shing-Tung Yau Honors class), July 2011, Zhejiang University, China
Advisor: Silei Wang

RESEARCH INTERESTS

Partial Differential Equations, Fluid Dynamics, Active Scalar, Mixing, Time-fractional Equations

PUBLICATIONS

T. Do, A. Kiselev, X. Xu, *Stability of Blow-up for a 1D model of axisymmetric 3D Euler*, arXiv preprint arXiv:1604.07118, to appear in Journal of Nonlinear Science.

Y Feng, L Li, J Liu, X Xu, *A note on one-dimensional time fractional ODEs*, arXiv preprint arXiv:1712.08956, to appear in Applied Math Letter.

Y Feng, L Li, J Liu, X Xu, *Continuous and discrete one dimensional autonomous fractional ODEs*, Discrete & Continuous Dynamical Systems-B (2017): 603-630.

L. Li., X. Xu, S. E. Spagnolie, *A locally gradient-preserving reinitialization for level set functions*, Journal of Scientific Computing 71.1 (2017): 274-302.

A. Kiselev, X. Xu, *Suppression of chemotactic explosion by mixing*, Archive for Rational Mechanics and Analysis 222.2 (2016): 1077-1112.

T. Do, V. Hoang, M. Radosz, X. Xu, *One-dimensional model equations for hyperbolic fluid flow*, Nonlinear Analysis: Theory, Methods & Applications 140 (2016): 1-11.

X. Xu, *Fast growth of the vorticity gradient in symmetric smooth domains for 2D incompressible ideal flow*, Journal of Mathematical Analysis and Applications 439.2 (2016): 594-607.

G. Iyer, A. Kiselev, X. Xu, *Lower bounds on the mix norm of passive scalars advected by incompressible enstrophy-constrained flows*, Nonlinearity 27 (2014) 973-985.

S. Li, X. Xu, G. Wang, *Design for triangular rational Bézier harmonic and biharmonic surfaces*, Journal of Zhejiang University(Science Edition), 2012, 39(2). (Chinese version)

HONORS AND AWARDS

- Vilas Conference Presentation Fund, University of Wisconsin-Madison, 2016
- Excellence in Research Award, Department of Mathematics, University of Wisconsin-Madison, 2015
- Chancellor's Opportunity Award, University of Wisconsin-Madison, 2012
- Excellent Graduates of Zhejiang Province, 2011
- Li & Fung fellowship, 2010
- Science and Technology Innovation Programs funds for college students of Zhejiang Province, 2010
- Special scholarship for freshman of Zhejiang University, 2007

TALKS

- AMS Sectional Meeting: Special Session on Nonlocality in Models for Kinetic, Chemical, and Population Dynamics, Oct 2018
- PDE Seminar, Duke University, Mar 2018
- AMS Joint Mathematics Meeting: AMS Special Session on Mathematical Fluid Mechanics: Analysis and Applications, Jan 2018
- Seminar, Zhejiang University, Dec 2017
- PDE Seminar, Brown University, Feb 2017
- Young Researchers Workshop, Duke University, Nov 2016
- Colloquium, Missouri University of Science and Technology, Oct, 2016
- CNA seminar, Carnegie Mellon University, Sep 2016
- Colloquium, University of Wisconsin-Milwaukee, Apr 2016
- Analysis Seminar, University of Wisconsin-Milwaukee, Apr 2016
- AMS Sectional Meeting: Special Session on PDE Analysis in Fluid Flows, University of Georgia, Athens, Mar 2016
- Special Seminar, University of Alberta, Feb 2016
- AMS Joint Mathmatics Meeting: AMS Special Session on Equations of Fluid Motion, Seattle, WA, Jan 2016
- Analysis Seminar, University of Wisconsin-Madison, Oct 2015
- AMS Sectional Meeting: Special Session on Nonlinear Conservation Laws and Applications, University of Nevada, Las Vegas, Apr 2015
- Texas PDE Conference, University of Houston, Mar 2015
- Fifth Annual Oklahoma PDE Workshop, Feb 2015
- Young Researchers Workshop: Multiscale phenomena: modeling, analysis and computation, College Park, MD, Oct 2014
- SIAM Chicago Area Student Conference, Northwestern University, Apr 2014
- Summer School short talk, Stanford University, Aug 2013

TEACHING EXPERIENCE

Instructor, Carnegie Mellon University

- 2018 Fall 21-370 Discrete-Time Finance
- 2018 Spring 21-241 Matrix and Linear Transformation
- 2017 Fall 21-476- Introduction to Dynamical System
- 2016 Fall 21-260- Differential Equations

Teaching Assistant, University of Wisconsin-Madison

- 2016 Spring MATH 319 - Techniques in Ordinary Differential Equations
- 2015 Fall MATH 320 - Differential Equation and Linear Algebra
- 2013 Fall MATH 211 - Business Calculus
- 2012 Fall MATH 221 - Calculus and Analytic Geometry
- 2011 Fall MATH 221 - Calculus and Analytic Geometry

ACADEMIC VISITS

Duke University, Mar 2018
Rice University, Dec 2015
Caltech, Oct 2015
Rice University, Aug 2014 - July 2015
Carnegie Mellon University, Apr 2014
Carnegie Mellon University, Feb 2013
University of Hong Kong (undergraduate transfer program), January-June 2010

PROFESSIONAL DEVELOPMENT

- MAA MathFest 2015, Great Talks for a General Audience: Coached Presentations by Graduate Students, Marriott Wardman Park, Washington, DC, Aug 2015
- Coordinator of a student seminar in Analysis for sophomores, Zhejiang University, 2010

SERVICE

- Organizer of AIM SQuaREs program: Towards a 3D Euler singularity, May 2018, Aug 2019
- Co-organizer of Special Session "Nonlocal PDEs in Fluid Dynamics" in AMS Sectional Meeting, Sep 2017
- Mentor of Directed Reading Program, 2015 Fall
- Judge in MAA Student Paper Sessions, Aug 2015
- Judge in Rice Undergraduate Research Symposium, Apr 2015
- Co-organizer of Mega Math Meet, May 2014
- Volunteer of International Congress of Chinese Mathematicians (ICCM) , Hangzhou, China, Dec 2007