

JIAN FANG

Phone: (+86)139-3664-0266

Email: jfang@hit.edu.cn

Department of Mathematics
Harbin Institute of Technology
Harbin, Heilongjiang, 150001, China

Curriculum Vitae

Employment

- December 2012—Present, Professor, Harbin Institute of Technology, China.
- March 2011—November 2012, Assistant Professor, Harbin Institute of Technology, China.
- September 2011—August 2013, Postdoctoral Researcher, Center for Disease Modelling (CDM), York University, Canada. (*Advisor: Jianhong Wu*)
- December 2013—November 2015, Postdoctoral Researcher, Ecole des Hautes Etudes en Sciences Sociales (EHESS), France. (*Advisor: Henri Berestycki*)

Education

- Oct. 2007—Aug. 2010, Joint PhD student, Memorial University of Newfoundland, Canada. (*Advisor: Xiaoqiang Zhao*).
- Sept. 2005—Jan. 2011, PhD in mathematics, Harbin Institute of Technology, China. (*Advisor: Junjie Wei*)
- Sept. 2001—July 2005, Bachelor of Science, Dalian University of Technology, China.

Funding and Award

- NSF of China, 2018-2021
- NSF of China for Young Scholars, 2012-2014.
- University Young Talent Scholar, 2012.
- University start-up fund, 2013-2015.
- Nomination of National 100 Excellent PhD Thesis, 2013.
- Innovation Award, China Development Bank, 2013.

Research Interests

My primary interest of research is the analysis of parabolic type nonlinear evolution systems in heterogeneous media. My current research focuses on the influence of spatio-temporal heterogeneity on entire solutions and long-term dynamics of initial value problems, as well as their applications to some related processes arising from biological invasions and disease spread.

Preprints & Publications

Preprints

16. Y. Pan, J. Fang and J. Wei, Seasonal influence on age-structured invasive species with yearly generation.
15. H. Berestycki and J. Fang, Forced waves of the Fisher-KPP equation in a shifting environment.

Publications

14. J. Fang, X. Yu and X.-Q. Zhao, Traveling waves and spreading speeds for time-space periodic monotone systems, *Journal of Functional Analysis*, 272(2017), 4222-4262.
13. J. Fang and G. Faye, Monotone traveling waves for delayed neural field equations, *Mathematical Models and Methods in Applied Sciences*, 26(2016), 1919-1954.
12. J. Fang, Y. Lou and J. Wu, Can pathogen spread keep pace with its host invasion? *SIAM Journal on Applied Mathematics*, 76(2016), 1633-1657.
11. J. Fang, S. Gourley and Y. Lou, Stage-structured models of intra- and inter-specific competition within age classes, *Journal of Differential Equations*, 260(2016), 1918-1953.
10. J. Fang and X.-Q. Zhao, Bistable traveling waves for monotone semiflows with applications, *Journal of the European Mathematical Society*, 17(2015), 2243-2288.
9. J. Fang and X.-Q. Zhao, Traveling waves for monotone semiflows with weak compactness, *SIAM Journal on Mathematical Analysis*, 46(2014), 3678-3704.
8. J. Fang, K. Lan, G. Seo and J. Wu, Spatial dynamics of an age-structured model of Asian clam, *SIAM Journal on Applied Mathematics*, 74(2014), 959-979.
7. J. Fang and J. Wu, Monotone traveling waves for delayed Lotka-Volterra competition systems, *Discrete and Continuous Dynamical Systems A*, 32(2012), 3043-3058.
6. J. Fang and X.-Q. Zhao, Monotone wavefronts for nonlocal Fisher-KPP equation, *Nonlinearity*, 24(2011) 3043-3054.
5. J. Fang, J. Wei and X.-Q. Zhao, Uniqueness of traveling waves for nonlocal lattice equations, *Proceedings of the American Mathematical Society*, 139(2011), 1361-1373.
4. J. Fang and X.-Q. Zhao, Existence and uniqueness of traveling waves for non-monotone integral equations with applications, *Journal of Differential Equations*, 248(2010), 2199-2226.
3. J. Fang, J. Wei and X.-Q. Zhao, Spreading speeds and travelling waves for non-monotone time-delayed lattice equations, *Proceedings of the Royal Society A*, 466(2010), 1919-1934.
2. J. Fang and X.-Q. Zhao, Monotone wavefronts for partially degenerate reaction-diffusion systems, *Journal of Dynamics and Differential Equations*, 21(2009), 663-680.
1. J. Fang, J. Wei and X.-Q. Zhao, Spatial dynamics of a nonlocal and time-delayed reaction-diffusion system, *Journal of Differential Equations*, 245(2008), 2749-2770.

Research Service

- Referee for *Journal of the European Mathematical Society*, *Mathematische Annalen*, *Proceedings of the London Mathematical Society*, *Journal of Differential Equations*, *SIAM Journal on Mathematical Analysis*, *SIAM Journal on Applied Mathematics*, *Integral and Differential Equations*, *DCDS-A*, *DCDS-B*, *Proceedings of the Royal Society of London*, *European Journal of Applied Mathematics*,

IMA Journal of Applied Mathematics, Journal of Mathematical Analysis and Applications, Nonlinear Analysis, Journal of Mathematical Biology, et al.

- Reviewer for zbMATH and MathSciNet.

Invited Presentations

- Session talk, The XI Americas Conference on Differential Equations and Nonlinear Analysis, University of Alberta, Aug.14-19, 2017.
- Session talk, The Workshop on the Qualitative and Bifurcation Theory of Differential Equations, Huaqiao University, June 30-July 4, 2017.
- 12-hour lectures on the topic "Traveling waves for some monotone dynamical systems", Center for PDE, East China Normal University, June 19-26, 2017.
- 50 minutes talk, The Eleventh East China Partial Differential Equations Conference, East China Normal University, June 14-17, 2017.
- Session talk, The 11th International Conference on Recent Advances in Applied Dynamical Systems, Xi'an Jiaotong University, June 8-11, 2017.
- Session talk, Third International Conference on Engineering and Computational Mathematics, The Hong Kong Polytechnic University, May 31-June 2, 2017.
- PDE seminar talk, Department of Mathematics, University of Marseille, France, November 8, 2016.
- PDE seminar talk, Department of Mathematics, University of Toulouse, France, October 18, 2016.
- 45 minutes talk, Workshop on Reaction-Diffusion Equations and Their Applications. Jiangsu Normal University, China, September 23-25, 2016.
- Round table discussion, Workshop on Difference Equations in Ecology: 30 years and counting, Banff, Canada, September 18-23, 2016.
- Session talk, 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, USA, July 1-5, 2016.
- Two-hour lecture, Department of Mathematics, Capital Normal University, China, June 29, 2016.
- 40 minutes talk, 10th International Conference on Recent Advances in Applied Dynamical Systems, Jiangsu Normal University, China, June 10-12.
- 35 minutes talk, International Workshop on Reaction Diffusion Equations with Applications. Lanzhou University, China, June 3-5, 2016.
- 30 minutes talk, International Conference on Reaction Diffusion Equations and their Applications to the Life, Social and Physical Sciences, Renmin University, China, May 24-26, 2016.
- 45 minutes talk, 2016 NCTS International Workshop in Mathematical Biology, National Tsing Hua University, Taiwan, May 21-23, 2016.
- Session talk, 8th International Congress on Industrial and Applied Mathematics (ICIAM), Beijing, China, August 10-14, 2015.
- 30 minutes talk, International Symposium on Application of Nonlinear Partial Differential Equations in Life Science, Chern Institute of Mathematics, Nankai University, Tianjin, China, August 4-7, 2015.
- Seminar talk, Institute of Mathematical Science, Renmin University, China, August 2014.

- Session talk, 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Madrid, Spain, July 7-11, 2014.
- 40 minutes talk, Eighth International Conference on Recent Advances in Applied Dynamical Systems, Guilin University of Electronic Technology, Guilin, China, June 2-4, 2014.
- Seminar talk, Department of Mathematics, University of Marseille, Marseille, France, May, 2014.
- 30 minutes talk, AARMS Workshop on Mathematical Biology, St. John's, Canada, July 27-29, 2013.
- Session talk. The 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications. Session 08 of "Propagation Phenomena Appearing in Reaction-Diffusion Systems", organized by Hirokazu Ninomiya and Masaharu Taniguchi. Orlando, USA, July 1-5, 2012.
- Session talk, The 2012 Annual Meeting of the Canadian Applied and Industrial Mathematical Society. Mini Symposium on Delay Differential Equations, organized by Sue Ann Campbell and Tony Humphries. Toronto, Canada, June 24-28, 2012.
- Applied Mathematics Colloquium talk, University of Western Ontario, Canada, February 2012.
- 10-hour lectures for graduate students—bistable traveling waves of abstract monotone semiflows as well as the applications in PDE models, University of Science and Technology of China, July, 2011.
- Seminar talk, Applied Mathematics Institute (AMI), University of Alberta, Canada, July, 2011.