Min Zhao

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Research Interests

- Partial differential equations and dynamic systems
  Reaction-diffusion equations, Nonlocal problems, Traveling waves, Spreading speed
- Biomathematics
  Prey–predator system, Nonlinear differential equation, Epidemic model
- Stochastic theory and process
  Brownian motion, Ergodic, Lévy process

Scientific Education

09/2024–present	Postdoctoral, IMT of the University Toulouse III-Paul Sabatier, France *Supervisors*: Prof. Grégory Faye and Jean-Michel Roquejoffre
09/2019–06/2023	Ph.D., Fundamental mathematics of Beijing Normal University, China *Title*: Propagation dynamics of several types of nonlocal problems *Supervisor*: Prof. Rong Yuan *Defended on* 03 June 2023
09/2021–09/2022	Joint training doctoral student, Applied mathematics *Supervisors*: Prof. Pierre Magal, University of Bordeaux, France Prof. Quentin Griette, University of Le Havre Normandy, France
09/2016–06/2019	Master degree, Mathematics of Taiyuan University of Technology, China *Supervisor*: Prof. Xiaoyun Wang
09/2011–06/2015	Bachelor degree, Mathematics and Applied Mathematics Shanxi Datong University, China

Research Publications

- **Publications**

1. Q. Griette, P. Magal, **M. Zhao**, Traveling waves with continuous profile for hyperbolic Keller-Segel equation, *European Journal of Applied Mathematics*, (2024), 1–29. (PDF)

2. **M. Zhao**, R. Yuan, The persistence of solutions in a nonlocal predator-prey system with a shifting habitat, *Acta Mathematica Scientia*, 44 (2024), 1096–1114. (PDF)

3. H. Li, **M. Zhao**, R. Yuan, Traveling Waves of Modified Leslie-Gower Predator-prey Systems, *International Journal of Biomathematics*, 2350107 (2023), 1–34. (PDF)

4. **M. Zhao**, R. Yuan, Z. Ma, X. Zhao, Spreading speeds for the predator-prey system with nonlocal dispersal, *Journal of Differential Equations*, 316 (2022), 552–598. (PDF)

5. **M. Zhao**, Z. Ma, R. Yuan, The spreading speed and the existence of planar waves for a class of predator-prey system with nonlocal diffusion, *Taiwanese Journal of Mathematics*, 26(2) (2022), 381–410. (PDF)

6. Y. Cheng, F. Zhang, **M. Zhao**, A stochastic model of HIV infection incorporating combined therapy of HAART driven by Lévy jumps, *Advances in Difference Equations*, 321 (2019), 1–17. (PDF)

7. X. Wang, **M. Zhao**, X. Wang, S. Li, N. Cao, H. Liu, The Application of Dynamic Models to the Exploration of $\beta_1\text{-}AR$ Overactivation as a Cause of Heart Failure, *Computational*

and Mathematical Methods in Medicine, 2018 (2018) 1613290. (PDF)

- **Preprints**

1. G. Faye and **M. Zhao**, The threshold phenomena for propagation in fractional Laplacian diffusion equations, submitted, hal-04644409v1, (2024), 1–20.

2. H. Li, **M. Zhao**, R. Yuan, Traveling Wave in a Ratio-dependent Holling-Tanner System with Nonlocal Diffusion and Strong Allee Effect, submitted, arXiv:2306.00666, (2023), 1–27.

3. H. Li, **M. Zhao**, R. Yuan, A sufficient condition on successful invasion by the predator, submitted, arXiv:2306.00713, (2023), 1–9.

4. **M. Zhao**, R. Yuan, Existence and Stability of Random Transition Waves for Nonautonomous Fisher-KPP Equations with Nonlocal Diffusion, submitted, arXiv:2305.19762, (2023), 1–27.

CONFERENCES AND COURSE

10/2022	International Conference on Nonlinear Partial Differential Equations 2022 and in honor of Prof. Hiroshi Matano's 70th Birthday
10/2022	Monotone Semiflows and Propagation Dynamiac
	Prof. Xiaoqiang Zhao, Memorial University of Newfoundland, Canada
9–10/2022	Introduction to the Theory of Traveling Waves
	Prof. Henri Berestycki, EHESS, Paris
07/2020	Online Summer School on Nonlinear Differential Equations and Applications
	Prof. François Hamel, Aix-Marseille University
10/2019	Symposium on Differential Equations and Dynamic Systems and commemorated the 90th anniversary of the birth of Mr. Tongren Ding
07/2016	Biomathematics Summer School
	Peking University

RESEARCH PROJECTS

10/2023–09/2025 (hosted)	**Natural Science Foundation of Tianjin** Propagation dynamics of fractional Laplacian diffusion equations (No. 23JCQNJC01010)
01/2022–12/2025 (participated)	**The National Natural Science Foundation of China** Some problems in the differential equation of almost periodic and time-delay (No. 12171039)
01/2019–12/2021 (participated)	**The National Natural Science Foundation of China** Game-based modeling of brucellosis transmission dynamics and Applications (No. 11801398)

AWARDS AND HONOR

2022	Graduate Academic Innovation Award Special Prize
	Beijing Normal University
2020	Second Class Academic Scholarship
	Beijing Normal University
2019–2020	Outstanding undergraduate teaching assistant
	Beijing Normal University
2018-2019	Second class academic scholarship
	Taiyuan University of Technology
2013–2014	National Inspirational Scholarship
	Shanxi Datong University

Work Experience

08/2023–08/2024	Lecturer of Mathematics at the School of Science
	Tianjin Chengjian University, China
09/2020–01/2021	Advanced Algebra Exercises
	Beijing Normal University
08/2015–08/2016	Junior high school mathematics
	tutoring institution in Datong of Shanxi Province, China

Skills

Language	Chinese (Native), English
Professional Knowledge	Office, LaTeX, Matlab, OriginPro

Interests and Activities

- Reading (Detective and reasoning books are my favorite)
- Travelling