

Wei Wang

Curriculum Vitae

Education

- Sept. 2022 – **Ph.D. Candidate in Theoretical Mathematics**, *Peking University*, Beijing, PRC
Present Advisor: Prof. Zhifei Zhang
- June – Sept. 2021 **Summer Research Program**, *The Hong Kong University of Science and Technology (HKUST)*, Hong Kong, PRC
Advisor: Prof. Tianling Jin
- Sept. 2018 – **B.S. in Mathematics and Applied Mathematics**, *Zhejiang University*, Hangzhou, Zhejiang, PRC
June 2022 Advisor: Prof. Ting Zhang
Bachelor Thesis: *Homogenization Problem of Second Order Elliptic Systems with Lower Order Terms*

Research Interests

- Research Areas Calculus of variations, geometric measure theory, elliptic equations, parabolic equations
- Focused Topics
- Homogenization theory for elliptic systems
 - Semilinear elliptic/parabolic equations
 - Geometric variational problems
 - Nonlocal operators

Publications

- [1] H. Fu, H. Wang, and W. Wang, Uniform estimates of Landau-de Gennes minimizers in the vanishing elasticity limit with line defects, *arXiv preprint arXiv: 2508.01811*
- [2] H. Fu, H. Wang, and W. Wang, Improved convergence of Landau-de Gennes minimizers in the vanishing elasticity limit, *arXiv preprint arXiv: 2507.14955*
- [3] W. Wang, W. Wang, and Z. Zhang, Existence of weak solutions for two-phase matrix-valued harmonic map flows, *arXiv preprint arXiv: 2506.16278*
- [4] H. Fu, W. Wang, K. Wu, and Z. Zhang, Stratification and rectifiability of harmonic map flows via tangent measures, *arXiv preprint arXiv: 2504.14880*.
- [5] R.L.Frank, T. Jin, and W. Wang, On the sharp constants in the regional fractional Sobolev inequalities, *Partial Differential Equations and Applications*, **6** (2025), 1-20.
- [6] W. Wang and Z. Zhang, Fine structure of rupture set for semilinear elliptic equations with singular nonlinearity, *arXiv preprint arXiv: 2411.16048*.
- [7] H. Fu, W. Wang, and Z. Zhang, Quantitative stratification and sharp regularity estimates for supercritical semilinear elliptic equations, *arXiv preprint arXiv: 2408.06726*.
- [8] W. Wang and Z. Zhang, Landau-de Gennes model with sextic potentials: asymptotic behavior of minimizers, *arXiv preprint arXiv: 2404.00677*.

- [9] W. Wang, Uniform estimates of resolvents in homogenization theory of elliptic systems, *Journal of Differential Equations*, **370** (2023), 1-65.
- [10] W. Wang and T. Zhang, Homogenization theory of elliptic systems with lower order terms in dimension two, *Communications on Pure and Applied Analysis*, **22** (2023), 787-824.

Honors and Awards

- Apr. 2025 **1st Prize, 2025 Graduate Research Exhibition of the School of Mathematical Sciences**, *Peking University*, Beijing, PRC
- Apr. 2024 **3rd Prize, 2024 Graduate Research Exhibition of the School of Mathematical Sciences**, *Peking University*, Beijing, PRC
- Oct. 2023 **Excellence Program for Graduate Students in Mathematics (Class of 2022)**, *Peking University*, Beijing, PRC
- Aug. 2022 **Nomination Award, ICCM Creative Undergraduate Thesis**, *Southeast University*, Nanjing, Jiangsu, PRC
- June 2022 **Outstanding Graduate Student**, *Zhejiang University*, Hangzhou, Zhejiang, PRC
- June 2022 **Honored Degree, Chu Kochen College**, *Zhejiang University*, Hangzhou, Zhejiang, PRC
- June 2021 **Nomination Award, S.-T. Yau College Student Mathematics Contest**, PRC

Talks and Presentations of the Research

- Nov. 2025 **The 3rd National Academic Exchange Forum for Doctoral Students in Frontier Mathematics**, *Peking University*, Beijing, PRC
- Aug. 2025 **Conference on Theory and Computation of Quasi Crystals**, *Nankai University*, Tianjin, PRC
- June 2025 **PDE and Geometry Seminar**, *Zhejiang University*, Zhejiang, PRC
- Apr. 2025 **2025 Graduate Research Exhibition of the School of Mathematical Sciences**, *Peking University*, Beijing, PRC
- Dec. 2024 **Year-End Conference of the PDE Group**, *Peking University*, Beijing, PRC
- Apr. 2024 **2024 Graduate Research Exhibition of the School of Mathematical Sciences**, *Peking University*, Beijing, PRC
- Aug. 2022 **ICCM Creative Undergraduate Thesis**, *Southeast University*, Nanjing, Jiangsu, PRC

Teaching and Teaching Assistant Experience

PKU

- Fall 2025 TA, Advanced Mathematics (C) (I)
- Spring 2025 TA, Advanced Mathematics (B) (II)
- Fall 2024 TA, Advanced Mathematics (A) (I)
- Spring 2024 TA, Advanced Mathematics (B) (II)
- Fall 2023 TA, Harmonic Analysis
- Spring 2023 TA, Functional Analysis (I)
- Fall 2022 TA, Advanced Mathematics (C) (I)

ZJU

Spring 2022 TA, Mathematical Analysis (II)
Fall 2021 TA, Mathematical Analysis (I)