Tongrui Wang

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Research Interests

Differential Geometry, Geometric Analysis

Education

2017 – 2022 **Nanjing University**, Mathematics, Ph.D.
Advisor: *Prof. Gang Tian*

2018 – 2022 **Beijing International Center for Mathematical Research**, Visiting Program
Supervisor: *Prof. Gang Tian*

2013 – 2017 **Nanjing University**, Mathematics and Applied Mathematics, Bachelor of Science

Work Experience

2022 – Now **Westlake University**, *Postdoctoral Fellow*.

2023.02 – 08 **Cornell University**, *Visiting Scholar*.

Publications

1. Min–Max Theory for G-Invariant Minimal Hypersurfaces, *The Journal of Geometric Analysis* 32(2022), no. 9, 1–53.
2. The existence of G-invariant constant mean curvature hypersurfaces (with Z. Wu), *Calculus of Variations and Partial Differential Equations* 61(2022), no. 4, 1–27.
3. Min-max theory for free boundary G-invariant minimal hypersurfaces, *Advances in Mathematics*, 425 (2023), 109087.
4. Equivariant Morse index of min-max G-invariant minimal hypersurfaces, *Mathematische Annalen*, (2023), 1–39.

Preprints

1. Equivariant min-max hypersurface in G-manifolds with positive Ricci curvature, submitted, arXiv:2304.03656, 2023.
2. Curvature estimates for stable free boundary minimal hypersurfaces in locally wedge-shaped manifolds, arXiv:2307.12948, 2023.
3. Min-max theory for free boundary minimal hypersurfaces in locally wedge-shaped manifolds, arXiv:2307.12953, 2023.

Research Talks

2023.05 Geometric Analysis Seminar, University of Chicago, US.
Talk on *Equivariant Min-max Theory and its Applications*.

2023.03 Analysis and Geometric Analysis Seminar, Cornell University, US.
Talk on *Equivariant Min-max Theory and its Applications*.

2022.12 Differential Geometry Seminar, University of Electronic Science and Technology of China, China.
Talk on *Equivariant min-max theory and Morse index estimates*.

2022.09 Westlake Math Colloquium, Westlake University, China.
Talk on *Almgren-Pitts min-max theory and its applications*.

2022.06 Colloquia & Seminars, Academy of Mathematics and Systems Science, CAS, China.
Talk on *Equivariant Almgren-Pitts min-max theory and its applications*.

2022.06 International Conferece on PDEs and Geometric Analysis, Shanghai Jiao Tong University, China.
Talk on *The existence of G-invariant constant mean curvature hypersurfaces*.

2021.05 International Conference on Geometric Analysis, China.
Talk on *Equivariant min-max theory under the setting of Almgren-Pitts*.

2020.08 Differential Geometry Seminar, Beijing International Center for Mathematical Research, China.
Talk on *Min–max theory for G-invariant minimal hypersurfaces*.

Teaching

Fall 2017 Calculus, Nanjing University, Assistant Instructor.

Honors and Awards

2018 China National Scholarship.
2017 Nanjing University Special Scholarship for New Students.
2015 Samsung Scholarship.
2014 China National Scholarship.