Curriculum Vitae
Zhichao Wang

Personal information

Current Address: Shanghai Center for Mathematical Science, Fudan University
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Research Interests

Geometric Analysis, minimal submanifolds, min-max theory, mean curvature flow.

Education

- 09.2013–07.2018 Peking University, China, Ph.D. (advisor: Prof. Gang Tian)
  - September 1, 2016–August 31, 2017, MIT, Visiting student. (advisor: Prof. William Minicozzi)
- 09.2009–06.2013 Nankai University, China, B.S.

Academic Visits and Employments

- September 1, 2023–now, Shanghai Center for Mathematical Science, Tenure-track faculty.
- September 1, 2021–August 31, 2023, The University of British Columbia, Postdoc. (Mentor: Profs Jingyi Chen and Ailana Fraser and Albert Chau)
- September 1, 2020–August 31, 2021, The University of Toronto, Postdoc. (Mentor: Prof. Yevgeny Liokumovich)
- September 1, 2018–August 31, 2020, Max Planck Institute for Mathematics, Postdoc. (Mentor: Prof. Werner Ballmann)

Publications and Preprints

1. (with J. Wang and B. Zhu) *Scalar-mean rigidity theorem for compact manifolds with boundary,*
   arXiv:2409.14503
2. (with X. Li) *Existence of embedded minimal tori in three-spheres with positive Ricci curvature,*
   arXiv:2409.10391

3. (with Y. Liokumovich) *On the waist and width inequality in complete 3-manifolds with positive scalar curvature,*
arxiv:2308.04044

4. (with X. Zhou) *Improved $C^{1,1}$ regularity for multiple membranes problem,*
arxiv:2308.00172

5. (with X. Zhou) *Existence of four minimal spheres in S^3 with a bumpy metric,*
arxiv:2305.08755

6. (with X. Zhou) *Min-max minimal hypersurfaces with higher multiplicity,* Accepted by **J. Differential Geom.**, arXiv:2201.06154

7. (with B. Zhu) *Uryson width of three dimensional mean convex domain with non-negative Ricci curvature,* **Journal of Functional Analysis** 285 (2023), no. 8, 110062.

8. *Conformal upper bounds for the volume spectrum,* **Geom. Funct. Anal.**, Vol. 31 (2021), 9921012.

9. (with A. Sun and X. Zhou) *Multiplicity one for min-max theory in compact manifolds with boundary and its applications,* **Calc. Var. Partial Differential Equations** Volume 63, article number 70 (2024).

10. *Existence of infinitely many free boundary minimal hypersurfaces,* **J. Differential Geom.** 126 (2024), no.1, 363–399.

11. *Existence of minimal hypersurfaces with non-empty free boundary for generic metrics,* **Amer. J. Math.** 144 (2022), no. 2, 599–606.

12. (with Q. Guang, M. Li and X. Zhou) *Min-max theory for free boundary minimal hypersurfaces II - General Morse index bounds and applications,* **Math. Annalen**, 379 (2021), no. 3-4, 1395–1424.

13. *Compactness and generic finiteness for free boundary minimal hypersurfaces (II),* arXiv:1906.08485 (2019)

14. (with Q. Guang and X. Zhou) *Compactness and generic finiteness for free boundary minimal hypersurfaces (I),* **Pacific J. Math.**, Vol. 310 (2021), No. 1, 85–114.

15. (with A. Sun) *Compactness of self-shrinkers in $\mathbb{R}^3$ with fixed genus,* **Adv. Math.** 367 (2020), 107110.

16. (with Q. Guang and X. Zhou) *Free boundary minimal hypersurfaces with least area,* **Comm. Anal. Geom.** 31(2023), no.5, 11771215.

17. *Min-max minimal hypersurface in manifolds with convex boundary and Ric ≥ 0,* **Mathematische Annalen**, 371 (2018), no. 3-4, 1545–1574.

Talks

- July 24, 2024, **Inner Mongolia University**, Inner Mongolia, China, Workshop on Geometric Analysis 2024.
- May 11, 2024, **Ningbo University**, Ningbo, China, Tianyuan Young Mathematician Forum.
- January 12, 2024, **Guangxi University**, Nanning, China, International Conference on Geometric Analysis of Ricci Curvature.
- December 28, 2023, **Ningbo University,** Ningbo, China, Geometric Analysis Seminar.
- December 5, 2023, **Beijing Institute of Technology**, Beijing, China, Workshop on Geometric Analysis.
- November 26, 2023, **Capital Normal University**, Beijing, China, Workshop on Geometric Analysis.
- November 14, 2023, **Zhejiang University**, Hangzhou, China, Zhejiang University-Westlake joint Seminar on Geometric Analysis.
- November 11-12, 2023, **Hangzhou Normal University**, Hangzhou, China, Workshop on Differential Geometry and Geometric Analysis.
- November 3, 2023, **Fudan University**, Shanghai, China, Lunch Seminar.
- September 8-14, 2023, **Guangxi Normal University**, Guilin, China, China-Japan Geometry Conference.
- August 6, 2023, **BIRS-UBC Okanagan**, Kelowna, Canada, Non-Linear Critical Point Theory in Analysis and Geometry.
- March 20, 2023, **Xiamen University**, Xiamen, China (online), Geometric Analysis Seminar.
- December 5, 2022, Toronto, Canada, Calculus of Variation and its Applications, Canadian Mathematics Society Winter Meeting.
- August 23, 2022, **Nankai University**, Tianjin, China (online), Geometric Analysis Seminar.
- February 28, 2022, **Duke University**, Durham, USA (online), Geometry & Topology Seminar.
- February 17, 2022, **The City University of New York**, New York, USA (online), Geometric Analysis Seminar.

- February 10, 2022, **University of Minnesota**, Minneapolis, USA (online), Differential Geometry and Symplectic Topology Seminar.
- January 21, 2022, **Yale University**, New Haven, USA (online), Geometric Analysis and Application.
- January 18, 2022, **University of Chicago**, Chicago, USA (online), Geometric Analysis Seminar
- January 11, 2022, **Fudan University**, Shanghai, China (online), Differential Geometry Seminar at SCMS.
- November 24, 2021, **Peking University**, Beijing, China (online), Geometric Analysis Seminar at BICMR.
- November 11, 2021, **Banff International Research Station**, Canada, New Directions in Geometric Flows.
- November 4, 2021, **Capital Normal University**, Beijing, China (online), Geometric Analysis Seminar.
- September 28, 2021, **The University of British Columbia**, Vancouver, Canada, Differential Geometry · Mathematical Physics · PDE Seminar.
- June 11-13, 2021, **Tongji University**, Shanghai, China (online), Workshop on Minimal Surfaces and Related Topics.
- March 22, 2021, **University College London**, London, United Kingdom (online), Mini-conference: Young researchers in spectral geometry II.
- December 21, 2020, **Zhejiang University**, Hangzhou, China (online), Geometric Analysis Seminar.
- December 18, 2020, **University of Toronto**, Toronto, Canada (online), Geometric Analysis group seminar.
- November 2, 2020, **University of Toronto**, Toronto, Canada (online), Geometry and Topology Seminar.
- October 19, 2020, **University of Toronto**, Toronto, Canada (online), Geometric Analysis group seminar.
- February 10, 2020, **University of Toronto**, Toronto, Canada, Geometry and Topology Seminar.
- November 6, 2019, **Universität Regensburg**, Regensburg, Germany, Global Analysis Seminar.
- October 24, 2019, **Max-Planck Institute for Mathematics**, Bonn, Germany, Differential Geometry Seminar.

- October 8, 2019, **The University of British Columbia**, Vancouver, Canada, Differential Geometry · Mathematical Physics · PDE Seminar.
- October 4, 2019, **University of California, Santa Barbara**, Santa Barbara, USA, Differential Geometry Seminar.
- August 13, 2019, **Tsinghua University**, Beijing, China, Geometric Analysis seminar.
- August 6-August 8, 2019, **Tianjin University**, Tianjin, China, Minicourse.
- November 29, 2018, **Max-Planck Institute for Mathematics**, Bonn, Germany, Differential Geometry Seminar.
- August 21, 2018, **Zhejiang University**, Hangzhou, China, Geometric Analysis Seminar.
- June 15, 2018, **Sun Yat-sen University**, Guangzhou, China, Geometric Analysis Seminar.
- May 23, 2018, Nanning, China, International Conference on Geometric Analysis.
- March 22, 2018, **Chinese University of Hong Kong**, Hong Kong, China, Geometric Analysis Seminar.
- February 1, 2018, **University of Sydney**, Sydney, Australia, International Conference on Differential Geometry: An Event In Honour of Professor Gang Tian's 59/60th Birthday.

Academic Services

- Conference organized:
  - Co-organizer, July 8-12 BICMR, Workshop on Minimal Surfaces and Mean Curvature Flows
- Referee for Duke Math. J.; Adv. Math.; J. Diff. Geom.; GAFA; Geometry & Topology; JEMS; Arch. Rational Mech. Anal.; Peking. Math. J.; Transactions of the AMS; IMRN; RMI; J. of Topology and Analysis; Proceedings of the AMS