

Yuchen Bi

Curriculum Vitae

Academic Positions

- 2025–now **Postdoctoral Researcher (Advisor: Ernst Kuwert)**, *University of Freiburg*, Germany
- 2023–2025 **Postdoctoral Researcher (Advisor: Gang Tian)**, *Peking University (BICMR)*, China

Education

- 2015–2023 **Ph.D. in Mathematics (Advisor: Jiayu Li)**, *University of Chinese Academy of Sciences (AMSS, CAS)*, China
- 2011–2015 **B.Sc. in Mathematics**, *Wuhan University*, China

Research Interests

Weak and singular geometric objects in geometric analysis

Publications

Preprints

- 2026 Yuchen Bi, “Mass-Capacity Rigidity for Asymptotically Flat Manifolds with Arbitrary Ends”, arXiv:2609.08579.
- Yuchen Bi, “Dihedral Rigidity for Convex Polytopes by Smooth Approximation”, arXiv:2608.06320.
- Yuchen Bi, Jintian Zhu, “Positive Scalar Curvature Obstructions via Singular Dimension Descent”, arXiv:2606.20528.
- Yuchen Bi, Jintian Zhu, “Curvature-free effects from volume growth and ends-counting and their applications”, arXiv:2605.12403.
- Yuchen Bi, Jintian Zhu, “Riemannian Penrose inequality in all dimensions”, arXiv:2605.00680.
- Yuchen Bi, Tianze Hao, Shihang He, Yuguang Shi, Jintian Zhu, “A proof for the Riemannian positive mass theorem up to dimension 19”, arXiv:2603.02769.
- 2025 Yuchen Bi, Jie Zhou, “Quantitative Stability of the Clifford Torus as a Willmore Minimizer”, arXiv:2511.19681.
- Yuchen Bi, Jintian Zhu, “Mass-capacity inequality modeled on conformally flat manifolds”, arXiv:2511.13215.

2022 Yuchen Bi, Jie Zhou, “Bi-Lipschitz rigidity for L^2 -almost CMC surfaces”, arXiv:2212.02946.

[To Appear](#)

2026 Yuchen Bi, Jie Zhou, “Linear Quantitative Rigidity for Almost–CMC Surfaces”, *Annali della Scuola Normale Superiore di Pisa, Classe di Scienze*, to appear. DOI. arXiv:2601.09457.

[Published Papers](#)

2026 Yuchen Bi, Jie Zhou, “Bi-Lipschitz Regularity of 2-Varifolds with the Critical Allard Condition”, *Journal of Functional Analysis* 291 (2026), no. 10, Paper No. 111666. DOI. arXiv:2212.03043.

2025 Yuchen Bi, Jie Zhou, “Optimal rigidity estimates for varifolds almost minimizing the Willmore energy”, *Transactions of the American Mathematical Society* 378 (2025), no. 2, 943–965.

2024 Yuchen Bi, Jiayu Li, “The Prescribed Q -Curvature Flow for Arbitrary Even Dimension in a Critical Case”, *Advances in Mathematics* 438 (2024), 109478.

2023 Yuchen Bi, Jiayu Li, Lei Liu, Shuangjie Peng, “The C^0 -convergence at the Neumann boundary for Liouville equations”, *Calculus of Variations and Partial Differential Equations* 62 (2023), no. 3, Paper No. 107.

Selected Talks

08/2026 “Mean-convex Smoothing of Singular Boundaries”, *Calculus of Variations on the Lake, Frauenchiemsee*. Joint work with Jintian Zhu.

05/2026 “Linear Quantitative Rigidity for Almost–CMC Surfaces”, 43rd Süddeutsches Kolloquium über Differentialgeometrie, University of Tübingen. Joint work with Jie Zhou.

03/2026 “Quantitative Rigidity of the Clifford Torus as the Willmore Minimizer”, 2026 Xiamen International Conference on Geometric Analysis. Joint work with Jie Zhou.

03/2026 “Mass-Capacity Inequality Modeled on Conformally Flat Manifolds”, 2026 Geometric Analysis Spring Conference, University of Science and Technology of China, Hefei. Joint work with Jintian Zhu.

Teaching Experience

2026–2027 **Lecture and Exercise Sessions**, *University of Freiburg*, Germany
Geometric Measure Theory, Winter Semester 2026/27.

2026 **Teaching Assistant**, *University of Freiburg*, Germany
Curves and Surfaces, Summer Semester 2026, with Ernst Kuwert.

2025–2026 **Lecture and Exercise Sessions**, *University of Freiburg*, Germany
Differential Geometry, Winter Semester 2025/26.