

Jun ZHANG (CV)

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CONTACT INFORMATION

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ACADEMIC POSITIONS

- **University of Science and Technology of China** 2022 - present
Tenure-track Assistant Professor
- **CRM – Université de Montréal, Canada** 2019 – 2021
CRM-ISM Postdoctoral Research Fellow
Advisors: Prof. F. Lalonde, Prof. O. Cornea, Dr. E. Shelukhin
- **Tel Aviv University, Israel** 2016 – 2019
Post-doctoral Researcher, School of Mathematical Sciences
Advisors: Prof. L. Polterovich, Prof. Y. Ostrover

EDUCATIONAL BACKGROUND

- **The University of Georgia, USA** 2012 – 2016
Ph.D. in Pure Mathematics, Department of Mathematics
Advisor: Prof. Michael Usher
Thesis title: Persistent homology and Hamiltonian dynamics
- **The University of Georgia, USA** 2011 – 2012
M.A. in Pure Mathematics, Department of Mathematics
- **Nanjing Normal University, China** 2006 – 2010
B.S. in Pure Mathematics, Mathematical Department

RESEARCH INTERESTS

- Symplectic geometry
- Contact geometry
- Microlocal analysis

PUBLICATION/PREPRINT

Journal papers

1. Persistent homology and Floer-Novikov theory (with Michael Usher). **Geometry & Topology** 20 (2016), no. 6, 3333-3430.
2. Embeddings of free groups into asymptotic cones of Hamiltonian diffeomorphisms (with Daniel A.-Gavela, et al.). **Journal of Topology and Analysis** 11 (2019), no. 2, 467-498.
3. p-cyclic persistent homology and Hofer distance. **Journal of Symplectic Geometry** 17 (2019), no. 3, 857-927.
4. Symplectic structure perturbations and continuity of symplectic invariants. **Algebraic & Geometric Topology** 19 (2019), no. 7, 3261-3314.
5. Chekanov's dichotomy in contact topology (with Daniel Rosen). **Mathematical Research Letters** 27 (2020), no. 4, 1165-1193.
6. Persistence modules, symplectic Banach-Mazur distance and Riemannian metrics (with Vukašin Stojisavljević). **International Journal of Mathematics** 32 (2021), no. 7, 2150040.
7. Relative growth rate and contact Banach-Mazur distance (with Daniel Rosen). **Geometriae Dedicata** 215 (2021), 1-30.
8. Hamiltonian perturbations in contact Floer homology (with Igor Uljarević). **Journal of Fixed Point Theory and Applications** 24, (2022), no. 71.
9. Symplectic non-convexity of toric domains (with Julien Dardennes and Jean Gutt). **Communications in Contemporary Mathematics**. DOI: 10.1142/S0219199723500104 (2023).
10. Hamiltonian knottedness and lifting paths from the shape invariant (with Richard Hind). **Compositio Mathematica** 159, 2416-2457 (2023).
11. Persistence K-theory (with Paul Biran and Octav Cornea). **Quantum Topology**, DOI: 10.4171/QT/222 (2024).
12. Triangulation, Persistence, and Fukaya categories (with Paul Biran and Octav Cornea). **Memoirs of the European Mathematical Society**, accepted and to appear (2024).
13. Notes on symplectic squeezing in T^*T^n and spectra of Finsler dynamics (with Qi Feng). **Mathematische Zeitschrift**, Volume 310, article number 7, (2025).
14. Spectrally-large scale geometry in cotangent bundles (with Qi Feng). **Israel Journal of Mathematics**, accepted and to appear (2025).
15. Coarse distance from dynamically convex to convex (with Julien Dardennes, Jean Gutt and Vinicius G. B. Ramos), **International Mathematics Research Notices**, Volume 2025, Issue 12, June 2025, rnaf179, doi.org/10.1093/imrn/rnaf179.

16. The shape invariant of symplectic ellipsoids (with Richard Hind), **Mathematische Annalen**. Volume 394, article number 63 (2026).
17. Quantitative contact Hamiltonian dynamics (with Danijel Djordjević and Igor Uljarević), **Journal of Topology and Analysis** (2026), doi.org/10.1142/S1793525326500421.
18. Strong Arnold chord conjecture via normalized capacities (with Jungsoo Kang), accepted and to appear in **Comptes Rendus Mathématique**.

Preprints

1. Triangulation and persistence: Algebra 101 (with Paul Biran and Octav Cornea), arxiv:2104.12258. **Merged into arxiv: 2304.01785.**
2. Remark on non-contractible closed geodesics and homotopy groups (with Egor Shelukhin), arxiv: 2307.13877. **Submitted.**
3. Quantitative characterization in contact Hamiltonian dynamics - I (with Danijel Djordjević and Igor Uljarević), arxiv: 2309.00527. **Merged into arXiv: 2507.13234.**
4. On the spectral capacity of submanifolds (with Dylan Cant), arXiv:2409.14142. **Submitted.**
5. Spectrally-large scale geometry via set-heaviness (with Qi Feng), arXiv:2503.14961. **Submitted.**
6. Contact quasi-states and their applications (with Igor Uljarević), arXiv:2503.18750. **Merged into arXiv: 2507.13234.**
7. Equivariant Floer cohomology for contactomorphisms of quotient spaces (with Dylan Cant and Eric Kilgore), arXiv:2602.21152. **Submitted.**
8. Geometry and dynamics on Liouville domains in $T^*\mathbb{T}^2$ (with Antong Zhu), arXiv:2603.29253. **Submitted.**
9. Symplectic dynamics via a tube construction (with Qi Feng), arXiv:2607.25549.

Monographs/Books

1. Quantitative Tamarkin Theory. CRM Short Courses; **Virtual Series on Symplectic Geometry. Springer International Publishing** (2020), e-ISBN: 978-3-030-37888-2.
2. Topological Persistence in Geometry and Analysis (with Leonid Polterovich, et al.). **American Mathematical Society - University Lecture Series**, Vol. 74 (2020), e-ISBN: 978-1-4704-5679-5.
3. Introduction to Quantitative Symplectic Geometry (with Antong Zhu). **Univeresity of Science and Technology Press - Distinguished Graduate Level Textbook Series** (中国科学技术大学出版社 — 一流规划教材) ISBN: 978-7-312-06282-7, (2025).

In progress

- Symplectic Smith theory and iterates of closed Reeb orbits (with Egor Shelukhin).
- Rabinowitz Floer homology with compact support and its application (with Sungho Kim).
- Geometric chaos from symplectomorphisms (with Huagui Duan, Jian Wang, JinXin Xue).
- Non-denseness of the Banach-Mazur topology (with Richard Hind).

GRANTS

1. National Natural Science Foundation of China (Grant No. 12511540054), **120,000 RMB**, 2026-2027. Principal Investigator. (国家自然科学基金 — 国际 (地区) 合作与交流项目)
2. National Natural Science Foundation of China (Grant No. 12301081), **300,000 RMB**, 2024 – 2026. Principal Investigator. (国家自然科学基金 — 青年科学基金项目)
3. National Natural Science Foundation of China (Grant No. 12361141812), **2,000,000 RMB**, 2024-2026. Co-Principal Investigator. (国家自然科学基金 — 国际 (地区) 合作与交流项目)
4. National Key R&D Program of China (Grant No. 2023YFA1010500), **3,000,000 RMB**, 2024-2028. Co-Principal Investigator. (科技部重点研发项目 — 青年科学家项目)
5. USTC Research Funds of the Double First-Class Initiative, **300, 000 RMB**, 2023-2024. Principal Investigator. (中国科学技术大学 — 青年创新重点基金)

ACADEMIC SUPERVISION

Graduate Students

- | | |
|-----------------------------------|----------------|
| • Hexiang Wang (Master's program) | 2026 - 2027 |
| • Qi FENG (Ph.D. program) | 2024 - present |
| • Antong ZHU (Master's program) | 2024 - 2026 |

Postdocs

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| • Habib Alizadeh (graduated from Université de Montréal) | 2025 – 2027 |
| • Sungho Kim (graduated from Seoul National University) | 2024 – 2026 |

INVITED SEMINAR/CONFERENCE TALKS

- Workshop on symplectic topology, University of Belgrade, Serbia, August 2026.
- Sino-Russian Conference on Interactions between Algebra and Geometry, SIMIS, Shanghai, June 2026.
- Recent advances in symplectic geometry, Tianyuan Mathematics Research Center, Kunming, May 2026.

- 天津大学几何拓扑研讨会, 天津, April 2026.
- Contact Geometry, General Relativity and Thermodynamics, SCGP, Stony Brook, March 2026.
- ICCM 2025 – 45 min talk, Shanghai, January 2026.
- Gauge theory and string geometry, Australian National University, Canberra, December 2025.
- New developments in symplectic geometry, Seoul National University, Seoul, November 2025.
- The International Conference on Advanced Topics in Dynamical Systems, Chern Institute of Mathematics, Nankai, October 2025.
- EIT Topology Conference, EIT, Ningbo, August 2025.
- Symplectic geometry seminar, IAS, Princeton, April 2025.
- Workshop in symplectic geometry, Tsinghua University, March 2025.
- Hamiltonian Dynamics and Celestial Mechanics, SUSTech International Center for Mathematics, Shenzhen, February 2025.
- 2024 RIMS-IBSCGP Conference on Recent Developments in Symplectic Topology, IBS-CGP, November 2024.
- 2024 Advanced Topology Summer Camp (Conference part), Tsinghua University, July 2024.
- 2024 MATRIX-IBSCGP Workshop on Symplectic and Low-dimensional Topology, IBS-CGP, June 2024
- Geometry and Dynamics seminar, Tsinghua University, April 2024.
- Geometry seminar, Seoul National University, October 2023.
- Symplectic seminar, Nankai University, September 2023.
- The Frontier in Topology, AMSS – Tianyuan Mathematical center, September, 2023.
- Workshop on symplectic topology, University of Belgrade, Serbia, August 2023.
- Persistence homology in symplectic and contact topology, University of Toulouse, Albi, June 2023.
- Topology seminar, Tsinghua University/ Yau Center, May 2023.
- Geometry seminar, Wuhan University, April 2023.
- Geometry seminar, Shandong University, March 2023.
- Non-linear Analysis and Dynamical System Conference, Nankai University (Virtual), October 2022.

- Symplectic Geometry Seminar, IBS-CGP (Virtual), October, 2022.
- Topology Seminar, AMSS - Chinese Academy of Sciences (Virtual), September, 2022.
- Pacific Rim Complex and Symplectic Geometry Conference, RIMS - Kyoto University (Japan), August 2022.
- Frontiers of Quantitative Symplectic Contact Geometry, Mittag-Leffler Institute (Sweden), July 2022.
- Joint Mathematics Meetings 2021 – AMS Special Session on Applied Topology, Washington DC (Virtual), January 2021.
- Symplectic Zoominar, CRM, Princeton/IAS, Tel Aviv, and Paris, September 2020.
- 2020 Georgia Topology Conference, University of Georgia, June 2020. (Postponed)
- AMS Sectional Meeting AMS Special Session, Purdue University, April 2020.
- RIMS & IBS-CGP Joint Workshop, RIMS – Kyoto University (Japan), December 2019.
- CRM - University of Montreal (Canada), Homological Algebra, Microlocal Analysis and Symplectic Geometry (conference), June 2019.
- Technion (Israel), C^0 aspects of symplectic geometry and Hamiltonian dynamics (conference), May 2019.
- Stanford University, Topology Seminar, November 2018.
- University of Notre Dame, Felix Klein Seminar in Geometry, November 2018.
- University of Michigan, Geometry Seminar, April 2018.
- University of Georgia, Topology Seminar, October 2017.
- Northwestern University, Geometry & Physics Seminar, September 2017.
- Binghamton University, Geometry & Topology Seminar, September 2017.
- University of Cologne (Germany), Computational Symplectic Topology (conference), July 2017.
- Tel Aviv University (Israel), Geometry & Dynamics Seminar, April 2017.
- Peking University – Beijing International Center for Mathematical Research (China), Geometry Seminar, March 2017.
- Beijing Normal University (China), Topology Seminar, February 2017.
- Institute of Basic Science – Center for Geometry and Physics (South Korea), Center for Geometry and Physics Seminar, February 2017.
- Australian National University (Australia), Geometry Seminar, May 2016.
- Georgia Southern University, Colloquium, September 2015.

AWARDS

- Research Fellowship, CRM – University of Montreal 2019 – 2021
- Research Fellowship, Tel Aviv University 2016 – 2019
- B. J. Ball Scholarship (Research Award), University of Georgia 2015
- First-class Scholarship for Undergraduates, Nanjing Normal University 2006 – 2010

ACADEMIC ACTIVITIES

Academic visiting

- University of Notre Dame August 2026 – July 2027
- IAS – Princeton University March 2025
- Tsinghua University January 2024
- Seoul National University October 2023
- University of Notre Dame October 2019
- Stanford University November 2018
- Michigan University April 2018
- University of Chicago January 2018
- Northwestern University September 2017
- Tel Aviv University September 2014 – January 2015

Seminar

- USTC – IGP, Symplectic Geometry Seminar Fall 2025 – present
- USTC – IGP, Geometry&Topology Seminar Fall 2022 – present
- Hebrew University in Jerusalem, Kazhdan Seminar Fall 2017
- Tel Aviv University, Geometry & Dynamics Seminar Fall 2016 – Spring 2019
- University of Georgia, Topology Seminar Fall 2011 – Spring 2016

Service

- Mathematical Reviews, zbMATH Reviews
- Co-organizing the 2020 ZOOM Reading Seminar (with Weiwei Wu)

Referee

Duke Mathematical Journal, Geometry&Topology, GAFA, JEMS, Compo. Math., Trans. Amer. Math. Soc., Selecta., Adv. Math.

TEACHING EXPERIENCE

University of Science and Technology of China

- Topic Course on Symplectic Topology (Graduate level – MATH7431P) Fall 2025
- Introduction to Differentiable Manifold (Graduate level – MATH5003P) Fall 2024
- Introduction to Symplectic Topology II (Graduate level – MATH6437P) Spring 2024
- Introduction to Symplectic Topology (Graduate level – MATH6435P) Spring 2023

McGill University

- Calculus for Management. Instructor. Winter 2020

Tel Aviv University

- Seminar course: Microlocal Sheaf Method. Instructor. Spring 2018

University of Georgia

- MATH2250: Calculus. Instructor. Summer 2015, Spring 2014
- MATH1113: Pre-calculus. Instructor. Fall 2015, Fall 2013

CONFERENCES

- 2026 International Conference on Symplectic Geometry, Tsinghua University, July 2026. **(Organizer)**
- International Conference on Symplectic Dynamics, SUSTech International Center for Mathematics, Shenzhen, August 2025. **(Co-organizer)**
- Conference on advanced development in symplectic topology and symplectic dynamics, Tianyuan Mathematical center, Kunming, April, 2025. **(Organizer)**
- The 1st Cross-Strait Symplectic Geometry Conference, Hefei (USTC), December 2024. **(Organizer)**
- AIMS 2024 - special session (New developments in symplectic dynamics), Abu Dhabi, December 2024. **(Organizer)**

REFERENCES

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|----------------------|--------------------------|--------------------------|
| • Richard Hind | University of Notre Dame | Richard.K.Hind.1@nd.edu |
| • Kaoru Ono | RIMS – Kyoto University | ono@kurims.kyoto-u.ac.jp |
| • Leonid Polterovich | Tel Aviv University | polterov@runbox.com |
| • Michael Usher | University of Georgia | mjusher3@gmail.com |