Jianru Duan

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Homepage: `https://duan-jianru.github.io/`

EDUCATION

Peking University   Beijing, China
Ph.D. Mathematics   2021 – 2026 *(expected)*
- Advisor: Prof. Yi Liu

University of California   Berkeley, CA, United States
Visiting scholar   2024 – 2025
- Host: Prof. Ian Agol

Peking University   Beijing, China
B.S. Mathematics   2017 – 2021

RESEARCH INTERESTS

Topology of 3-manifolds

L^2-theory and geometric group theory

PREPRINTS AND PUBLICATIONS

1. Universal L^2-torsion and taut sutured decompositions. Preprint available at `https://duan-jianru.github.io/`.

2. Guts determine the leading coefficients of L^2-Alexander torsions. Trans. Amer. Math. Soc. 378 (2025), 3699–3720.

3. On the positivity of twisted L^2-torsion for 3–manifolds. Algebr. Geom. Topol. 24 (2024), 2307–2329.

AWARDS AND HONORS

- BICMR Mathematical Award for Graduate Students   2025–2026
- Peking University President's Scholarship   2023–2025
- National Scholarship for Graduate Student   2023
- Huaixin Bachelor (BICMR)   2021
- Peking University President's Scholarship   2021
- Outstanding Student Award of Beijing   2020
- National Scholarship for Undergraduate Student   2018

INVITED TALKS

- The 11th Sino-Russian Conference on Knot Theory and Related Topics at Xi'an Jiaotong-Liverpool University, Suzhou, July 2025.
- Geometric Group Theory Seminar at Shanghai Center for Mathematical Sciences, Fudan University, May 2025.
- Caltech Geometry & Topology Seminar, April 2025.
- Rutgers Geometry & Topology Seminar, February 2025.
- Topology Seminar at UC Berkeley, January 2025.
- Gave a talk at South China University of Technology, Guangzhou, June 2024.
- YMSC Topology Seminar at YMSC, Tsinghua University, April 2024.

ACADEMIC
SERVICES

Teaching assistant of Homology Theory in 2021 Spring
Teaching assistant of Low Dimensional Topology 2022 Fall
Teaching assistant Homology Theory in 2024 Spring
Student editor of Front. Math., 2023–2024