

Xiaolei Wu

Shanghai Center for Mathematical Sciences

Fudan University

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Homepage : <https://wuxiaolei.org>

PERSONAL INFORMATION

- Citizenship: China.
- Born: Anhui China, 1985.

RESEARCH INTERESTS

- **Geometric Group Theory:** finiteness properties, Σ -invariants, homological stability, Artin groups, Thompson groups, big mapping class groups, bounded cohomology.
- **Manifold Topology:** aspherical manifolds, Borel Conjecture.
- **Algebraic K-theory:** algebraic K-theory of group rings, assembly maps, Farrell–Jones Conjecture.

EDUCATION

- *Bachelor of Science*, Mathematics, Peking University, China, Jul. 2007.
- *Master of Science*, Mathematics, Beijing Normal University, China, Jul. 2010.
Thesis Advisor: Hongzhu Gao
- *Ph.D*, Mathematics, SUNY Binghamton, May 2014.
Thesis Advisor: F. Thomas Farrell

EMPLOYMENTS

- May 2014 ~ Aug. 2015, Point postdoctoral fellow, Free University of Berlin, Berlin, Germany.
- Sep. 2015 ~ Aug. 2017, Postdoctoral fellow, Max Planck Institute for Mathematics, Bonn, Germany.
- Sep. 2017 ~ Oct. 2019, Postdoctoral fellow, University of Bonn, Bonn, Germany.
- Nov. 2019 ~ Oct. 2021, Postdoctoral fellow, Bielefeld University, Bielefeld, Germany.
- Nov. 2021 ~ current, Young investigator, Fudan University, Shanghai, China.

ACADEMIC VISITS

- Feb. 2013 ~ Jul. 2013, Junior Visiting Scholar, Maths Science Center, Tsinghua University, Beijing, China.
- Jul. 2016 ~ Aug. 2016 (4 weeks), Visiting Scholar, Shanghai Center for Mathematical Sciences, Fudan University, Shanghai, China.
- Jun. 2023 ~ Jul. 2023 (5 weeks), Institute of Mathematical Sciences, Madrid, Spain.
- Jul. 2023 (3 weeks), Faculty of Mathematics, Bielefeld University, Bielefeld, Germany.

- Sep. 2023 (10 days), Simion Stoilow Institute of Mathematics of the Romanian Academy (IMAR), Bucharest, Romania.
- Jul. 2025 (1 week), Simion Stoilow Institute of Mathematics of the Romanian Academy (IMAR), Bucharest, Romania.
- Jul. 2025 - Aug. 2025 (2 weeks), Faculty of Mathematics, Karlsruhe Institute of Technology, Karlsruhe, Germany.
- Feb. 2026 (10 days), Department of Mathematics, Purdue University, United States.
- Feb. 2026 (1 week), School of Mathematics, KIAS, Seoul, South Korea.
- Jul. 2026 (1 week), Faculty of Mathematics, Bielefeld University, Bielefeld, Germany.

Grants

- May 2014 ~ Nov. 2015, grant associated with Point postdoctoral fellowship at Free University of Berlin, 10,800 €.
- Nov. 2021 ~ Dec. 2026, Starter grant, Fudan University, 500,000 RMB.
- 2024 ~ 2025, National Science Foundation of China (Tianyuan special program, No. 12326601), co-PI, 400,000 RMB.
- 2027 ~ 2030, National Science Foundation of China (General Program, No. 12671087), PI, 430,000 RMB.

PAPERS

1. (with F. T. Farrell) The Farrell–Jones Conjecture for the solvable Baumslag–Solitar groups. *Math. Ann.* 359 (2014), no. 3-4, 839-862.
2. (with F. T. Farrell) The Farrell–Jones Conjecture for some nearly crystallographic groups. *Algebr. Geom. Topol.* 15 (2015), no. 3, 1667-1690.
3. (with F. T. Farrell) Isomorphism Conjecture for Baumslag–Solitar groups. *Proc. Amer. Math. Soc.* 143 (2015), no. 8, 3401-3406.
4. (with P. Patzt) Stability results for Houghton groups, *Algebr. Geom. Topol.* 16 (2016), no. 4, 2365-2377.
5. Farrell–Jones Conjecture for fundamental groups of graphs of virtually cyclic groups, *Topology Appl.* 206 (2016) 185-189.
6. (With M. Ullmann) Note on the injectivity of the Loday assembly map, *J. Algebra* 489 (2017) 460-462.
7. (with T. von Puttkamer) On the finiteness of the classifying space for the family of virtually cyclic subgroups, *Groups Geom. Dyn.* 13 (2019), 707-729.
8. (with T. von Puttkamer) Linear groups, conjugacy growth, and classifying space for families of subgroups, *Int. Math. Res. Not. IMRN* 2019, no. 10, 3130-3168.
9. (with F. T. Farrell) The Isomorphism Conjecture for solvable groups in Waldhausen’s A-theory, *J. Topol. Anal.* Vol. 11, No. 02, 405-426 (2019).
10. (with F. T. Farrell) Riemannian foliation with exotic tori as leaves, *Bull. Lond. Math. Soc.* 51 (2019) 745-750.
11. (with T. von Puttkamer) Some results related to finiteness properties of groups for families of subgroups, *Algebr. Geom. Topol.* 20 (2020), no. 6, 2885-2904.
12. (with B. Brück and D. Kielak) The Farrell–Jones Conjecture for normally poly-free groups, *Proc. Amer. Math. Soc.* 149 (2021), 2349-2356.

13. (with Y. Su) On the homotopy of closed manifolds and finite CW-complexes, *Proc. Amer. Math. Soc.* 150 (2022), 2239–2248.
14. Poly-freeness of Artin groups and the Farrell–Jones Conjecture, *J. Group Theory* 25 (2022), no. 1, 11–24.
15. (with R. Skipper) Finiteness properties for relatives of braided Higman–Thompson groups, *Groups Geom. Dyn.* 17 (2023), no. 4, 1357–1391.
16. (with M. Palmer) Big mapping class groups with uncountable integral homology, *Big mapping class groups with uncountable integral homology. Doc. Math.* 29 (2024), no. 1, 159–189.
17. (with J. Aramayona, K.-U. Bux, J. Flechsig, N. Petrosyan, with an appendix by O. Randal-Williams) Asymptotic mapping class groups of Cantor manifolds and their finiteness properties, *Rev. Mat. Iberoam.* 40 (2024), no. 6, 2003–2072.
18. (with M. Palmer) On the homology of big mapping class groups, *J. Topol.* 17 (2024), no. 4, Paper No. e12358, 41 pp.
19. (with S. Ye) Splittings and poly-freeness of triangle Artin groups, *Trans. Amer. Math. Soc.* 378 (2025), 4707–4737.
20. (with J. Aramayona, R. de Pool, R. Skipper, J. Tao, N. G. Vlamis) Non-planar ends are continuously unforgettable, *Int. Math. Res. Not. IMRN* 2025, no.5, rna026.
21. (with J. Aramayona, J. Aroca, M. Cumplido, R. Skipper), Block mapping class groups and their finiteness properties, *Geom Dedicata* 219, 24 (2025).
22. (with F. Wu, M. Zhao, Z. Zhou) Embedding groups into boundedly acyclic groups, *J. Lond. Math. Soc.* (2) 111 (2025), no. 5, Paper No. e70164.
23. (with M. Palmer) Compact and finite-type support in the homology of big mapping class groups, *J. Lond. Math. Soc.* (2) 112 (2025), no. 3, Paper No. e70258.
24. (with R. Skipper) Homological stability for the ribbon Higman–Thompson groups, *Algebr. Geom. Topol.*, 25–8 (2025), 4633–4665.
25. (With A. Minasyan, J. Merladet, S. Ye) Appendix to: Virtual retractions in free constructions, by A. Minasyan and J. Merladet, *Trans. Amer. Math. Soc.* 379 (2026), 72097250.
26. (With M. Zhao, X. Ma) Ample groupoids that are neither almost finite nor purely infinite, *J. Topol. Anal.*, DOI: <https://doi.org/10.1142/S1793525326500329>.
27. (with K.-U. Bux, C. Llosa Isenrich) On the Boone–Higman Conjecture for groups acting on locally finite trees, to appear in *Duke Math. J.*, arXiv:2408.05673.
28. (with E. Schesler, R. Skipper) The Higman–Thompson groups V_n are $(2, 2, 2)$ -generated, preprint, arXiv:2411.09069.
29. (with S. Ye) Some questions related to free-by-cyclic groups and tubular groups, preprint, arXiv:2504.14192.
30. (with C. Llosa Isenrich, E. Schesler) Infinitely presented simple groups separated by homological finiteness properties, preprint, arXiv:2510.01952.
31. (with M. Palmer) Embedding groups into acyclic groups, preprint, arXiv:2510.16879.
32. (With J. Oh, Y. Qing) The number of ends of big mapping class groups, preprint, arXiv:2512.09776.
33. (With F. Fournier-Facio, M.C.B. Zaremsky) Abstract twisted Brin–Thompson groups, preprint 2026, arXiv:2603.24687.
34. (With X. Huang, S. Ye) Virtual inheritance properties of graph products, preprint 2026, arXiv:2606.14148.

35. (With S. Ye) Pure braid groups are RFRS, preprint 2026, arXiv:2608.13978.

MINI-COURSES

- “Finiteness properties of groups”, ShanghaiTech University, Shanghai China, Sep. 2024.
- “Farrell–Jones Conjecture”, Workshop on manifolds, Nanjing University, Nanjing, China, Jan. 2025.
- “Bass–Serre theory”, Xi’an Jiaotong University, Xi’an, China, Jul. 2026.
- “Bass–Serre theory”, Shanghai Institute for Mathematics and Interdisciplinary Sciences, Shanghai, China, Sep. 2026(expected).

INVITED TALKS

- The 11th Annual Graduate Student Topology Conference, Indiana University, United States, Apr. 2012.
- AMS Sectional Meeting (Fall Central Sectional Meeting), University of Akron, United States, Oct. 2012.
- Topology Seminar, Institute of Mathematics, Chinese Academy of Sciences, Beijing, China, Mar. 2013.
- Topology Seminar, Department of Mathematics, Beijing Normal University, Beijing, China, Apr. 2013.
- Workshop on Algebraic Topology, Capital Normal University, Beijing, China, Jun., 2013.
- Topology Seminar, Department of Mathematics, Ohio State University, Columbus, United States, Nov. 2013.
- Topology Seminar, Mathematical Institute, University of Bonn, Bonn, Germany, Jul. 2014.
- Research Seminar, Department of Mathematical Sciences, Xi’an Jiaotong-Liverpool University, Suzhou, China, Aug. 2014.
- Joint Meeting of the German Mathematical Society and the Polish Mathematical Society, Groups and Topology session, Poznań, Poland, Sep. 2014.
- Topology Seminar, Institute of Mathematics, Chinese Academy of Sciences, Beijing, China, Dec. 2015.
- Research Seminar, Shanghai Center for Mathematical Sciences, Fudan University, Shanghai, China, Aug. 2016.
- Workshop on the Farrell–Jones Conjecture, Hausdorff Research Institute for Mathematics (HIM), Bonn, Germany, Oct. 2016.
- Oberseminar, Max Planck Institute for Mathematics, Bonn, Germany, Jul. 2017.
- Topology/Geometry Oberseminar, Mathematisches Institut, University of Göttingen, Göttingen, Germany, Oct. 2017.
- Research Seminar, Institute of Mathematics, Chinese Academy of Sciences, Beijing, China, Nov. 2017.
- Pure Mathematics Seminar, Department of Mathematics, Royal Holloway, University of London, London, United Kingdom, Dec. 2017.
- London Mathematics scheme 3 Meeting on “Cohomology of functor categories for topological groups”, Royal Holloway, University of London, London, United Kingdom, Dec. 2017.

- Young Mathematician Forum, Shanghai Center for Mathematical Sciences and School of Mathematical Sciences, Fudan University, Shanghai, China, Dec. 2017.
- Young Talents Workshop, School of Mathematical Sciences, Zhejiang University, Hangzhou, China, Mar. 2018.
- Research Seminar, Yau Mathematical Sciences Center, Tsinghua University, Beijing, China, Mar. 2018.
- Pure Maths Seminar, Math Institute, University of Düsseldorf, Düsseldorf, Germany, Jun. 2018.
- Oberseminar Differentialgeometrie, University of Augsburg, Augsburg, Germany, Dec. 2018.
- Oberseminar Groups and Geometry, Faculty of Mathematics, Bielefeld University, Bielefeld, Germany, May 2019.
- Conference on “K-theory and Noncommutative Geometry”, Shanghai Center for Mathematical Sciences, Fudan University, Shanghai, China, Jun. 2019.
- Research seminar, School of Mathematical Sciences, Tongji University, Shanghai, China, Jun. 2019.
- Geometry Seminar, School of Mathematical Sciences, University of Science and Technology of China, Hefei, China, Jul. 2019.
- Oberseminar Differentialgeometrie, Department of Mathematics, Karlsruhe Institute of Technology, Karlsruhe Germany, Jan. 2020.
- East China virtual Topology seminar, China, Aug. 2020.
- Moscow-Beijing Virtual topology seminar, Tsinghua University, Beijing, China, Sep. 2020.
- Virtual Topology seminar, Ohio State University, Columbus, United States, Nov. 2020.
- Gap Seminar (virtual), School of Mathematical Sciences, University of Science and Technology of China, Hefei, China, Jul. 2021.
- “World of Group Craft” conference (virtual), Aug. 2021.
- Münster GGT seminar (virtual), University of Münster, Germany, Nov. 2021.
- Online topology seminar, Department of Mathematics, Purdue University, United States, Dec. 2021.
- “Moduli and Friends” (virtual), Mathematical Institute of the Romanian Academy, Romania, Dec. 2021.
- Zhufeng Colloquium (virtual), School of Mathematics, Shandong University, China, Dec. 2021.
- Long distance GGT online seminar in Mexico, Mar. 2022.
- Topology Seminar (virtual), Yau Mathematical Sciences Center, Tsinghua University, Beijing, China, Apr. 2022.
- Lunch Colloquium (virtual), School of Mathematics, Fudan University, Shanghai China, May 2022.
- Topology Seminar (virtual), School of Mathematics, Sun Yat-sen University, Guangzhou, China, May 2022.
- Topology seminar (virtual), The Chinese University of Hong Kong, Shenzhen, Shenzhen, China, Sep. 2022.
- Geometry and topology seminar, ShanghaiTech University, Shanghai, China, Sep. 2022.

- Conformal dynamics and groups seminar (virtual), Peking University, Beijing, China, Oct. 2022.
- Noncommutative geometry seminar, Fudan University, Shanghai, China, Oct. 2022.
- East China topology conference, Tongji University, Shanghai, China, Dec. 2022.
- Jiangong Chen Lecture (virtual), Hangzhou Normal University, Zhejiang, China, Dec. 2022.
- The 18th East Asian Conference on Geometric Topology, Plenary Speaker, Soochow University, Suzhou, China, Feb. 2023.
- Dynamics Seminar, Soochow University, Suzhou, China, Apr. 2023.
- Northeast Topology Seminar, Northeast University, Shengyang, China, Apr. 2023.
- The 118th Anniversary of Fudan University and the 57th Scientific workshop, Shanghai Center for Mathematical Sciences, Fudan University, Shanghai, China, May 2023.
- Workshop on “Interactions between Algebraic Topology and Geometric Group Theory”, BIRS-CMO, Oaxaca, Mexico, May 2023.
- Seminar at the “Thematic program on geometric group theory and low-dimensional geometry and topology”, ICMAT, Madrid, Spain, Jun. 2023.
- Conference on “Moduli and Friends”, Simion Stoilow Institute of Mathematics of the Romanian Academy (IMAR), Bucharest, Romania, Sep. 2023.
- Topology seminar, Shanghai Jiao Tong University, Shanghai, China, Nov. 2023.
- East China topology conference, Xi'an Jiaotong-Liverpool University, Suzhou, China, Dec. 2023.
- Beijing-Moscow Mathematics Colloquium (online), Jan. 2024.
- The 19th East Asian Conference on Geometric Topology, session Speaker, Kyoto University, Kyoto, Japan, Feb. 2024.
- Topological and homological methods in group theory, contributed talk, Bielefeld, Germany, Mar. 2024.
- Topology Seminar, Institute of Mathematics, Chinese Academy of Sciences, Beijing, China, May 2024.
- Topology Seminar, Peking University, Beijing, China, May 2024.
- Workshop on Topology, Capital Normal University, Beijing, China, May 2024.
- 2024 Geometry & Topology conference, Qingtian, China, June 2024.
- The 4th. Xi'an Geometry and topology conference, Xi'an Jiaotong University, Xi'an, China, Jul. 2024
- Topology Seminar, Shanghai Institute for Mathematics and Interdisciplinary Sciences, Shanghai, China, Oct. 2024.
- Workshop on hyperbolic geometry, Soochow University, Suzhou, China, Oct. 2024.
- Seminar, Anhui Normal University, Wuhu, Anhui China, Oct. 2024.
- Seminar, The Chinese university of Hong Kong Shenzhen, China, Nov. 2024.
- Online Seminar on Bounded Cohomology, Nov. 2024.
- The 20th East Asian Conference on Geometric Topology, session speaker, Tokyo University, Tokyo, Japan, Feb. 2025.

- Topology Seminar, Shanghai Institute for Mathematics and Interdisciplinary Sciences, Shanghai, China, Mar. 2025.
- Topology Seminar, Yau Mathematical Sciences Center, Tsinghua University, Beijing, China, Apr. 2025.
- Topology Seminar, East China Normal University, Shanghai, China, May 2025.
- Workshop “Bucharest Topology Days”, Simion Stoilow Institute of Mathematics of the Romanian Academy (IMAR), Bucharest, Romania, Jul. 2025.
- AG Seminar “Topologie und Geometrische Gruppentheorie”, Fakultät für Mathematik, Karlsruhe Institute of Technology, Karlsruhe Germany, Jul. 2025.
- Seminar on “Theories and Computations in Mathematical Physics and Topology”, TianYuan Mathematics Research Center, Kunming China, Sep. 2025.
- Jiuzhang Seminar (Virtual), Lanzhou University, Nov. 2025.
- Workshop on “Low dimensional topology and dynamics”, Tongji University, China, Nov. 2025.
- Workshop on “Geometric group theory”, East China Normal University, Shanghai, China, Dec. 2025.
- Geometric group theory Seminar, Department of Mathematics, Purdue University, United States, Feb. 2026.
- Seminar on Geometry and topology, KIAS Seoul, South Korea, Feb. 2026.
- Seminar, Institute of Geometry and Physics, University of Science and Technology of China, Hefei, China, Apr. 2026.
- The 5th. Xi’an Geometry and topology conference, Xi’an Jiaotong University, Xi’an, China, May 2026.
- Young Geometric Group Theory XIV, KIAS Seoul, South Korea, Jun. 2026.
- Online Seminar, School of Mathematics, Changchun Normal University, Changchun, China, Jun. 2026.
- Seminar, Chern Institute of Mathematics, Nankai University, Tianjin, China, Jun. 2026.
- Workshop on topology, Capital Normal University, Beijing, China, Sep. 2026(expected).
- Workshop on “Dynamical Group Theory 9”, KIAS Seoul, South Korea, Nov. 2026(expected).

SERVICES

- Referee for: Acta Math. Sin. (Engl. Ser.), Adv. Math., Algebr. Geom. Topol., Bull. Malays. Math. Sci. Soc., Groups Geom. Dyn., IMRN, J. Lond. Math. Soc., J. Pure Applied Algebra, J. Topol., J. Topol. Anal., Math. Z., New York J. Math., Proc. London Math. Soc., Royal Society Open Science, Sci. China Math., Trans. Amer. Math. Soc..
- Reviewer for the Mathematical Reviews.
- The 4th, 5th, 6th Binghamton University Graduate Conference in Algebra and Topology, Binghamton University. **Co-organizer**
- Online reading seminar “Thompson’s groups”, Winter 2020, Bielefeld University. **Co-organizer**
- Online reading seminar “Big mapping class groups”, Summer 2021, Bielefeld University. **Co-organizer**

- Online reading seminar “Sigma invariants”, Oct. 2021 ~ Jan. 2023.
Co-organizer
- Fudan Topology seminar, Nov. 2021 ~ current, Fudan University.
Founder & Co-organizer
- Geometric Group Theory Graduate Summer School, Shanghai Center for Mathematical Sciences, Fudan University, Aug. 2022.
Co-organizer
- 2023 SCMS Workshop on Geometric Group Theory, Shanghai Center for Mathematical Sciences, Fudan University, Aug. 2023.
Co-organizer
- 2024 Shanghai Geometric Group Theory Workshop, Shanghai Center for Mathematical Sciences, Fudan University, Jul. 2024.
Co-organizer
- Workshop on hyperbolic geometry and geometric group theory, Shanghai Institute for Mathematics and Interdisciplinary Sciences, Fudan University, Dec. 2025.
Co-organizer
- 2026 Shanghai Geometric Group Theory Workshop, Shanghai Center for Mathematical Sciences, Fudan University, Jul. 2026.
Co-organizer

TEACHING EXPERIENCES

- Sep. 2008 ~ Jan. 2009, Teaching Assistant for Advanced Mathematics, Beijing Normal University.
- Mar. 2009 ~ June 2009, Teaching Assistant for Differential Geometry, Beijing Normal University.
- Sep. 2009 ~ Jan. 2010, Teaching Assistant for Calculus I, Beijing Normal University.
- Mar. 2010 ~ June 2010, Teaching Assistant for Calculus II, Beijing Normal University.
- Sep. 2010 ~ Dec. 2010, Teaching Assistant for Mathematics in Action, SUNY Binghamton.
- Feb. 2011 ~ May 2011, Teaching Assistant for Mathematics in Action, SUNY Binghamton.
- Sep. 2011 ~ Dec. 2011, Instructor for Calculus I, SUNY Binghamton.
- Feb. 2012 ~ May. 2011, Instructor for Calculus II, SUNY Binghamton.
- Sep. 2012 ~ Dec. 2012, Instructor for Calculus I, SUNY Binghamton.
- Sep. 2013 ~ Dec. 2013, Instructor for Calculus I, SUNY Binghamton.
- Feb. 2014 ~ May. 2014, Instructor for Linear Algebra, SUNY Binghamton.
- Apr. 2020 ~ Jul. 2020, organizer for the proseminar: groups and geometry, Bielefeld University.
- Apr. 2021 ~ Jul. 2021, Teaching assistant for Geometrie und Topologie, Bielefeld University.
- Feb. 2022 ~ Jun. 2022, Lecturer for “Homological algebra and geometric applications”, Fudan University.
- Feb. 2023 ~ Jun. 2023, Lecturer for “Geometric Group Theory”, joint with Yulan Qing, Fudan University.
- Sep. 2023 ~ Dec. 2023, Lecturer for “Homology of groups”, Fudan University.
- Feb. 2024 ~ Jun. 2024, Lecturer for “Homological algebra and geometric applications”, joint with Jianchao Wu, Fudan University.

- Sep. 2024 ~ Dec. 2024, Lecturer for “Differential geometry II” / “Advanced topics in Geometric group theory”, Fudan University.
- Sep. 2025 ~ Jan. 2026, Lecturer for “Geometric Group Theory”, Fudan University.

SUPERVISION

- Master Students:
 - Zixiang Zhou (j.w. Zhi Lü), 2022 - 2025, afterwards Ph.D at EPFL, Switzerland;
 - Fan Wu (j.w. Jiming Ma), 2022 - 2025, afterwards Ph.D at TAMU, United States;
 - Xiaoming Huang (j.w. Zhi Lü), 2024 - current.
- Ph.D Students:
 - Mengfei Zhao (2022 - current);
- Postdoc:
 - Josiah Oh (j.w. Yulan Qing), 2023 - 2026.

REFERENCES

- Laura Anderson (Teaching)
SUNY Binghamton
E-mail: laura@math.binghamton.edu
- Kai-Uwe Bux
Bielefeld University
Email: bux@math.uni-bielefeld.de
- F. Thomas Farrell (advisor)
Yau Mathematical Sciences Center at Tsinghua University
E-mail: farrell@math.binghamton.edu
- Wolfgang Lück
University of Bonn
E-mail: wolfgang.lueck@him.uni-bonn.de
- Brita Nucinkis
Royal Holloway, University of London
E-mail: brita.Nucinkis@rhul.ac.uk