Li Lai

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Work Experience

2025–Present **Xiamen University**, School of Mathematical Sciences.
Associate Professor

2023–2025 **Peking University**, Beijing International Center for Mathematical Research.
Postdoc, Mentor: Liang Xiao

2020–2021 **Fudan University**, School of Mathematical Sciences.
Research Assistant, Mentor: Yijun Yao

Education

2021–2023 **Tsinghua University**, Department of Mathematical Sciences, Beijing, China.
Ph.D. Mathematics, Advisor: Pin Yu

2014–2020 **Tsinghua University**, Department of Mathematical Sciences, Beijing, China.
M.S. Mathematics, Advisor: Pin Yu

2010–2014 **Tsinghua University**, Department of Mathematical Sciences, Beijing, China.
B.S. Mathematics

Research Interests

I mainly work on transcendental number theory. I am interested especially in odd zeta values $\zeta(2k+1)$, p-adic odd zeta values $\zeta_p(2k+1)$ and multiple zeta values $\zeta(k_1, k_2, \ldots, k_r)$.

Publications

6. Li Lai, Cezar Lupu and Johannes Sprang,
On the irrationality of certain p-adic zeta values,
Res. Math. Sci. 12 (2025), no. 4, Paper No. 77.
arXiv:2505.23088

5. Li Lai,
On the irrationality of certain 2-adic zeta values,
Int. J. Number Theory 21 (2025), no. 1, 207–235.
arXiv:2304.00816

4. Li Lai, Jiong-Yue Li and Pin Yu,
On the rigidity of stationary charged black holes: small perturbations of the non-extremal Kerr-Newman family,
J. Differential Geom. 125 (2023), no. 3, 553–612.
arXiv:1911.10560

3. Steven Charlton, Herbert Gangl, Li Lai, Ce Xu and Jianqiang Zhao,
On two conjectures of Sun concerning Apéry-like series,
Forum Math. 35 (2023), no. 6, 1533–1547.
arXiv:2210.14704

2. Li Lai and Li Zhou,
At least two of $\zeta(5), \zeta(7), \ldots, \zeta(35)$ are irrational,
Publ. Math. Debrecen 101/3–4 (2022), 353–372.
arXiv:2103.00904

1. Li Lai and Pin Yu,
A note on the number of irrational odd zeta values,
Compos. Math. 156 (2020), no. 8, 1699–1717.
arXiv:1911.08458

Preprints

7. Li Lai and Jia Li,
A partial result towards the Chowla–Milnor conjecture,
arXiv:2505.12687

6. Li Lai, Johannes Sprang and Wadim Zudilin,
A note on the irrationality of $\zeta_2(5)$,
arXiv:2505.05005

5. Li Lai,
A note on the number of irrational odd zeta values, II,
arXiv:2501.05321

4. Li Lai,
Small improvements on the Ball–Rivoal theorem and its p-adic variant,
arXiv:2407.14236v2

3. Li Lai and Johannes Sprang,
Many p-adic odd zeta values are irrational,
to appear in Michigan Math. J.,
arXiv:2306.10393

2. Li Lai, Cezar Lupu and Derek Orr,
Elementary proofs of Zagier's formula for multiple zeta values and its odd variant,
to appear in Proc. Amer. Math. Soc.,
arXiv:2201.09262

1. Li Lai,
On the largest prime divisor of $n! + 1$,
to appear in Bull. Aust. Math. Soc.,
arXiv:2103.14894

Awards and Honors

2012 Nianzeng Sun Mathematical Analysis Award (at Tsinghua University)

2010 51^{st} International Mathematical Olympiad: Gold Medal

Teaching

Fall 2024 Rational Functions and the Irrationality of Odd Zeta Values, Mini Course, Peking University

Spring 2024 Advanced Mathematics B (2), Peking University

Spring 2021 Rational Functions and the Irrationality of Odd Zeta Values, Short Course, Fudan University

Seminar (Co)Organized

Fall 2021–Spring 2022 Tsinghua-BIMSA Learning Seminar on Multiple Zeta Values, Tsinghua University

Other Experiences and Activities

2017 Finisher of Columbia168 ULTRA-TRAIL® THREE GORGES (168 km trail running)

Spring 2013 Exchange student at École Normale Supérieure, Paris, France

CV updated: 2025-10-10