

# Li Lai

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## Education

- 2021–Present **Tsinghua University**, Beijing, China.  
Ph.D. candidate Mathematics, Advisor: Pin Yu
- 2014–2020 **Tsinghua University**, Yau Mathematical Sciences Center.  
M.S. Mathematics, Advisor: Pin Yu
- 2010–2014 **Tsinghua University**, Beijing, China.  
B.S. Mathematics

## Research Interests

I mainly work on transcendental number theory. I am interested especially in odd zeta values,  $p$ -adic zeta values and multiple zeta values.

## Publications

3. Steven Charlton, Herbert Gangl, Li Lai, Ce Xu and Jianqiang Zhao,  
*On two conjectures of Sun concerning Apéry-like series*,  
Forum Mathematicum, 2023.  
arXiv:2210.14704
2. Li Lai and Li Zhou,  
*At least two of  $\zeta(5), \zeta(7), \dots, \zeta(35)$  are irrational*,  
Publicationes Mathematicae 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*,  
Compositio Mathematica 156 (2020), no. 8, 1699–1717.  
arXiv:1911.08458

## Preprints

4. Li Lai,  
*On the irrationality of certain 2-adic zeta values*,  
arXiv:2304.00816
3. Li Lai, Cezar Lupu and Derek Orr,  
*Elementary proofs of Zagier's formula for multiple zeta values and its odd variant*,  
arXiv:2201.09262
2. Li Lai,  
*On the largest prime divisor of  $n! + 1$* ,  
arXiv:2103.14894
1. 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*,  
accepted in Journal of Differential Geometry. arXiv:1911.10560

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## Awards and Honors

- 2012 Nianzeng Sun Mathematical Analysis Award (at Tsinghua University)
- 2010 51<sup>st</sup> International Mathematical Olympiad: Gold Medal

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## Talks

- April 5, 2023 BICMR Number Theory Seminar  
On the irrationality of certain 2-adic zeta values
- January 9, 2023 East Asia Core Doctoral Forum in Mathematics (Online)  
At least two of  $\zeta(5), \zeta(7), \dots, \zeta(35)$  are irrational
- August 8, 2022 Conference on MZVs and Related Topics (Online)  
Linear forms in Riemann zeta values and MZVs
- July 12, 2022 BIMSA-YMSC Tsinghua Number Theory Seminar (Online)  
Elementary proofs of Zagier's formula for multiple zeta values and its odd variant
- March 21, 2022 Jiangxi Normal University  
At least two of  $\zeta(5), \zeta(7), \dots, \zeta(35)$  are irrational
- March 12, 2022 Anhui Normal University  
Elementary proofs of Zagier's formula for multiple zeta values and its odd variant
- January 7, 2022 Learning Seminar on Multiple Zeta Values, YMSC&BIMSA  
Linear forms in Riemann zeta values and MZVs
- June 27, 2020 Webinar on APDE (Online)  
Recent progress on the irrationality of  $\zeta(2k+1)$ .

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## Seminar (Co)Organized

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

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## Teaching Experiences

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

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## Teaching Assistant Experiences

- Fall 2021 Advanced Calculus 1 (Yinghua Ai, Tsinghua University)
- Spring 2021 Real Analysis (Yijun Yao, Fudan University)
- Fall 2017 Mathematical Analysis 3 (Pin Yu, Tsinghua University)

Spring 2017 Mathematical Analysis 2 (Chenghao Sun, Tsinghua University)  
Spring 2016 Linear Algebra (Lingbing He, Tsinghua University)  
Fall 2014–Fall 2015 Mathematical Analysis 1–3 (Xuguang Lu, Tsinghua University)

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## Other Experiences and Activities

Fall 2020–Spring 2021 Research assistant at Fudan University, Shanghai, China  
2017 Finisher of Columbia168 ULTRA-TRAIL<sup>®</sup> THREE GORGES (168 km trail running)  
Spring 2013 Exchange student at École normale supérieure, Paris, France

CV updated: 2023-04-05