

# Li Lai

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## Positions

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

## Education

2021–2023 **Tsinghua University**, Beijing, China.  
Ph.D. 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*,  
Publicaciones 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

5. Li Lai and Johannes Sprang,  
*Many  $p$ -adic odd zeta values are irrational*,  
arXiv:2306.10393
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

August 5, 2023 Zhejiang Sci-Tech University

Many  $p$ -adic odd zeta values are irrational

May 27, 2023 Anhui Normal University

On the irrationality of certain 2-adic zeta values

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  $\zeta(2k + 1)$ .

## Seminar (Co)Organized

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

## Teaching Experiences

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

## 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)

## 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