

# Ruichen XU (徐睿晨)

Ph.D Student, Chinese Academy of Sciences

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🔗 <https://xuruichen98.github.io/>

**Citizenship:** People's Republic of China

**Current Place of Residence:** Beijing, China

## Education

- **Chinese Academy of Sciences** *Ph.D student in mathematics* Sept 2021 - July 2026 (*Expected*)
  - Doctoral Advisor: Xin WAN.
  - Research Interest: Number theory, especially Iwasawa theory. In particular:
    - \* Automorphic methods in Iwasawa theory
    - \* Iwasawa theory in families
    - \* Arithmetic applications of Iwasawa theory, such as the arithmetic of elliptic curves in relation to the Birch and Swinnerton-Dyer conjecture, and its extensions to Galois representations, including the Bloch-Kato conjecture.
- **Beihang University** *Bachelor of Science in mathematics* Sept 2017 - July 2021
  - Undergraduate Advisor: Peng GAO and Shijin ZHANG (thesis advisor).
  - Undergraduate Thesis: *The Proof of Fermat's Last Theorem: Wiles' Proof and Beyond*

## Publications and Preprints

- *On the Mordell-Weil rank of certain CM abelian varieties over anticyclotomic towers*, with Haidong LI, preprint (2025). arXiv:[2502.12648](https://arxiv.org/abs/2502.12648).
- *The Gan-Gross-Prasad period of Klingen Eisenstein families over unitary groups*, preprint (2024). arXiv: [2410.13132](https://arxiv.org/abs/2410.13132).

## Visiting Experiences

- **Université Marie et Louis Pasteur** Dec 2024 - July 2025
  - Host Advisor: Olivier FOUQUET.
  - Host Institute: Laboratoire de Mathématiques de Besançon (LmB).
  - Supported by the program “2024 International Research Collaboration Program for Postgraduate Students” of Chinese Academy of Sciences, together with LmB.
- **Peking University** *The 13th Enhanced Program for Graduate Study* Mar 2021 - July 2021
- **Peking University** *The 12th Enhanced Program for Graduate Study (Online)* Mar 2020 - July 2020

## Conference Talks

- **Géométrie algébrique et théorie des nombres en Bourgogne Franche-Comté** Mar 28, 2025  
*Title:* The method of Eisenstein congruences in Iwasawa theory.  
*Location:* Institut de Mathématiques de Bourgogne. Dijon, France.
- **33èmes Journées Arithmétiques** July 1, 2025  
*Title:* The Gan-Gross-Prasad period of Klingen Eisenstein families over unitary groups.  
*Location:* Université du Luxembourg. Esch-sur-Alzette, Luxembourg.

## Scholarships

- **Professor Hua Loo-Keng Scholarship** *Chinese Academy of Sciences* 2022, 2023  
for excellence in PhD qualifying exams and research.
- **Professor Hua Loo-Keng Scholarship** *Chinese Academy of Sciences* 2019, 2020, 2021  
for excellence in undergraduate mathematical coursework and contests.

## Teaching Experiences

- **Advanced Abstract Algebra** *Teaching Assistant* Fall 2020  
Taught by Shaoshi CHEN (Chinese Academy of Sciences) at Beihang University.
- **Complex Analysis** *Teaching Assistant (Online)* Spring 2020  
Taught by Shengjian WU (Peking University) at Beihang University.

## Conferences Attended

- **33èmes Journées Arithmétiques** *Esch-sur-Alzette, Luxembourg* July 2025  
At the *Université du Luxembourg*.
- **Iwasawa Theory and Representations of p-Adic Groups** *Lille, France* June 2025  
At the *Laboratoire Paul Painlevé, Université de Lille*.
- **Géométrie algébrique et théorie des nombres en Bourgogne Franche-Comté** Mar 2025  
At the *Institut de Mathématiques de Bourgogne, Dijon, France*.
- **Young researchers in Galois Representations and related topics** *Genova, Italy* Jan 2025  
At the *Università di Genova*.
- **Workshop on p-adic Geometry** *Singapore* Nov 2024  
At the *National University of Singapore*.
- **BSD Conjecture and Goldfeld Conjecture** *Kunming, Yunnan, China* Oct 2024  
At *Tianyuan Mathematics Research Center*.
- **Development of Iwasawa Theory** *Yokohama, Kanagawa, Japan* Jul 2024  
A conference in honor of the 60th birthday of Masato Kurihara. At *Keio University*.
- **2024 Jinling Conference of Number Theory** *Nanjing, Jiangsu, China* Apr 2024  
At *Nanjing University*.
- **Special Values of L-functions** *Sanya, Hainan, China* Jan 2024  
At *Tsinghua Sanya International Mathematics Forum*.
- **The 3rd Cross Strait Workshop on Arithmetic Geometry** *Hefei, Anhui, China* Aug 2023  
At the *University of Science and Technology of China*.
- **Workshop on Arithmetic and Topology** *Shenzhen, Guangdong, China* Aug 2023  
At the *Southern University of Science and Technology*.
- **Iwasawa 2023: in memory of John Coates** *Cambridge, the United Kingdom* July 2023  
At the *University of Cambridge*.
- **Satellite Conference in Number Theory of ICBS** *Beijing, China* July 2023  
At *Morningside Center of Mathematics, Chinese Academy of Sciences*.
- **2023 Jinling Conference of Number Theory** *Nanjing, Jiangsu, China* June 2023  
At *Nanjing University*.

## Summer Schools Attended

- **Summer school on Galois representations and Reciprocity** *Hanoi, Vietnam* July 2024  
At *Vietnam Institute for Advanced Study in Mathematics*.
- **2021 Summer School on Number Theory** *Xi'an, Shaanxi, China* July 2021  
At *Xi'an Jiaotong University*.
- **Theta Correspondence and Its Arithmetic Applications** *Suzhou, Jiangsu, China* July 2021  
At *Soochow University*.
- **Short Courses on Number Theory** *Xiamen, Fujian, China (Online)* July 2020  
At *Xiamen University*.
- **2020 SCMS Algebraic Geometry Summer School** *Shanghai, China (Online)* July 2020  
At *Shanghai Center of Mathematical Sciences, Fudan University*.
- **“The Road to Mathematics” Int’l Summer School** *Harbin, Heilongjiang, China* July 2019  
At *Harbin Institute of Technology*.

## Languages

- **Chinese:** Native
- **English:** Proficient
- **French:** Beginner