

QIHANG SUN

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Personal website

RESEARCH INTERESTS

Analytic number theory, modular forms, Kloosterman sums, spectral theory, integer partitions, circle method and exponential sums.

EDUCATION

University of Illinois, Urbana-Champaign (UIUC), USA

- Ph.D. (in Mathematics), 2024.
- Thesis: *Half-integral weight Kloosterman sums and integer partitions*. Advisor: Prof. Scott Ahlgren.

Xi'an Jiaotong University (XJTU), China

- B.S. (Honors in Mathematics), 2019.
- Senior thesis: *Posterior Consistency for Bayesian Inverse Problems under Mixed-Gaussian Assumptions*, A+. Advisor: Prof. Junxiong Jia.

PUBLICATIONS AND PREPRINTS

- 1 **Uniform bounds for Kloosterman sums of half-integral weight, same-sign case.** submitted. arXiv: [2309.05233](https://arxiv.org/abs/2309.05233)
- 2 **Uniform bounds for Kloosterman sums of half-integral weight with applications.** *Forum Math.* (2024). doi: [10.1515/forum-2023-0201](https://doi.org/10.1515/forum-2023-0201)
- 3 **Effective estimates for traces of singular moduli** (joint with O. González). *Res. Number Theory* 10, 29 (2024). doi: [10.1007/s40993-024-00517-6](https://doi.org/10.1007/s40993-024-00517-6)

TALKS

- 1 **Speed talk: exact formulas for rank of partitions.** Universität zu Köln, Germany. International Conference on Modular Forms and q -Series. *Mar. 12, 2024.*
- 2 **Lightening talk: exact formulas for rank of partitions.** Tulane University. Annual Clifford Lectures. *Feb. 25, 2023.*
- 3 **Asymptotics in partitions: circle method and Kloosterman sums.** UIUC. Number Theory Seminar. *Oct. 17, 2023.*
- 4 **Integer partitions and Kloosterman sums.** UIUC. Graduate Number Theory Seminar. *Oct. 12, 2023.*
- 5 **Sums of Kloosterman sums with applications to partitions.** XJTU, China. Number Theory Seminar. *Jul. 21, 2023.*

- 6 **Sums of Kloosterman sums and their applications.** EPF Lausanne, Switzerland. Workshop on “Arithmetic Statistics in Automorphic Forms and Analytic Number Theory”. *Jun. 8, 2023.*
- 7 **Uniform bounds on sums of Kloosterman sums and the applications to partitions.** Louisiana State University, USA. 35th Automorphic Forms Workshop. *May 24, 2023.*
- 8 **Speed talk: uniform bounds on sums of Kloosterman sums analogue to Goldfeld and Sarnak.** Max-Planck-Institut für Mathematik, Bonn, Germany. Arithmetic Statistics, Automorphic Forms and Ergodic Methods. *Apr. 24, 2023.*
- 9 **Uniform bounds on sums of Kloosterman sums and their application on partitions.** Technische Universität Darmstadt, Germany. Early Number Theory Researchers Workshop. *Oct. 28, 2022.*

TEACHING EXPERIENCE

UIUC

- Taught discussion sections: Math 220 (Calc, FA23), 241 (Calc 3, FA21), 234 (Calc for Business, SP21).
- Grader: Math 444 (Real Analysis, SP23, FA22), 241 (Calc 3, SP23), 347 (Fundamental Math, SP20), 416 (Abstract Linear Algebra, SP20, FA19), 285/286 (ODE, FA19).
- Worked for [NetMath](#) (SP22) and [CBTF](#) (FA20) in UIUC.
- In [Teaching evaluation: list of teachers ranked as excellent by their students](#), SP21, Math 234.

AWARDS

- 2024 Philippe Tondeur Dissertation Prize.
- 2023-24 Bateman Prize in Number Theory.
- 2023 Paul T. Bateman Fellowship in Number Theory.

LANGUAGES

- English: Fluent. Chinese: Native Language.

SOFTWARE

- Mathematica, C++, MATLAB.