

# QIHANG SUN

University of Lille  
Department of Mathematics

[qihang.sun@univ-lille.fr](mailto:qihang.sun@univ-lille.fr)  
Personal website

## RESEARCH INTERESTS

---

Analytic number theory, modular form, Kloosterman sum, exponential sum and their applications.

## EXPERIENCE

---

### University of Lille, France

- Postdoc, 2024 – 2026.8 (expected). Supervisor: Prof. Dr. [Danylo Radchenko](#).

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

- Ph.D. (in Mathematics), 2019 – 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), 2015 – 2019.

## PUBLICATIONS AND PREPRINTS

---

- 1 **Fourier interpolation in dimensions 3 and 4 with real-variable Kloosterman sums.**  
In preparation.
- 2 **Vanishing properties of Kloosterman sums and Dyson's conjectures.**  
Ramanujan J., 66(50), 2025. arXiv: [2406.07469](#); doi: [10.1007/s11139-024-01011-4](#)
- 3 **Exact formulae for ranks of partitions.**  
Trans. Amer. Math. Soc., *accepted*. arXiv: [2406.06294](#)
- 4 **Uniform bounds for Kloosterman sums of half-integral weight, same-sign case.**  
J. Number Theory, 274, 2025, pp. 104-139. arXiv: [2309.05233](#); doi: [10.1016/j.jnt.2024.11.012](#)
- 5 **Uniform bounds for Kloosterman sums of half-integral weight with applications.**  
Forum Math. 37(1), 2025, pp. 75-109. arXiv: [2305.19651](#); doi: [10.1515/forum-2023-0201](#)
- 6 **Effective estimates for traces of singular moduli** (joint with O. González).  
Res. Number Theory 10(29), 2024. arXiv: [2305.19649](#); doi: [10.1007/s40993-024-00517-6](#)

## TALKS

---

- 1 **Exact formulae for ranks of partitions.** International Seminar on Automorphic Forms (Online seminar). Oct. 29, 2024
- 2 **Exact formulae for ranks of partitions.** Universität zu Köln, Germany. Number Theory Seminar. Oct. 7, 2024.

- 3 **Exact formulae for ranks of partitions.** Centre international de rencontres mathématiques (CIRM), Marseille, France. Building Bridges: 6th EU/US Summer School & Workshop on Automorphic Forms and Related Topics (BB6). École et Atelier sur les formes automorphes et interactions. *Sept. 9, 2024.*
- 4 **Speed talk: exact formulas for rank of partitions.** Universität zu Köln, Germany. International Conference on Modular Forms and  $q$ -Series. *Mar. 12, 2024.*
- 5 **Lightening talk: exact formulas for rank of partitions.** Tulane University, USA. Annual Clifford Lectures. *Feb. 25, 2023.*
- 6 **Asymptotics in partitions: circle method and Kloosterman sums.** UIUC. Number Theory Seminar. *Oct. 17, 2023.*
- 7 **Integer partitions and Kloosterman sums.** UIUC. Graduate Number Theory Seminar. *Oct. 12, 2023.*
- 8 **Sums of Kloosterman sums with applications to partitions.** XJTU, China. Number Theory Seminar. *Jul. 21, 2023.*
- 9 **Sums of Kloosterman sums and their applications.** EPF Lausanne, Switzerland. Workshop on “Arithmetic Statistics in Automorphic Forms and Analytic Number Theory”. *Jun. 8, 2023.*
- 10 **Uniform bounds on sums of Kloosterman sums and the applications to partitions.** Louisiana State University, USA. 35th Automorphic Forms Workshop. *May 24, 2023.*
- 11 **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.*
- 12 **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. ([link](#))
- 2023-24 Bateman Prize in Number Theory. ([link](#))
- 2023 Paul T. Bateman Fellowship in Number Theory. ([link](#))

### LANGUAGE

---

- English (fluent); Chinese (native language).
- Mathematica, C++, MATLAB.