

Haohao Liu

Curriculum Vitae

IRMA, Université de Strasbourg
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Employment

2024-2026 **Postdoc**, *Université de Strasbourg*, France

Education

2021-2024 **Ph.D.**, *IMJ-PRG, Sorbonne University*, Thesis: Integral points, monodromy, generic vanishing and Fourier-Mukai transform
supervised by Anna Cadoret, defended on 25/06/2024

2018-2021 **Le diplôme de l'ENS**, *DMA, École Normale Supérieure (ENS)*, France

2019-2020 **Master in Mathematics**, *Sorbonne University*

2015-2019 **Bachelor in Mathematics**, *University of Science and Technology of China (USTC)*

Publications

- Quasi-coherent GAGA, *Journal of Algebra*, 681 (2025), 290–305
- Generic vanishing theorem for Fujiki class $\mathcal{C}$, *Mathematische Zeitschrift*, 310 (2025), no. 2, 1–28, article number 29
- Integral points of Shimura varieties: an "all or nothing" principle, *Journal of Number Theory*, 277 (2025), 124–146
- Quasi-coherent sheaves on complex analytic spaces, *Pure and Applied Mathematics Quarterly*, 21 (2025), no. 5, 1931–1937

Preprints

The following are available at <https://irma.math.unistra.fr/~liu/research.html>:

- Specialization of Néron-Severi groups of singular varieties, 2025, 43 pages
- Specialization of Néron-Severi class groups of normal varieties, 2025, 30 pages
- (with A. Cadoret) Specialization of convolution groups on abelian varieties, arXiv, 2025, 41 pages
- Normality of monodromy group in generic Tannakian group, arXiv, 2025, 35 pages
- Lifting line bundles to schemes over p-adic base, 2025, 24 pages
- Infinitesimal cohomology and singular cohomology, 2025, 61 pages
- Fourier-Mukai transform on complex tori, revisited, 2024, 48 pages
- Sheaves with connection on complex tori, 2024, 36 pages

Talks

- Nov. 2025 **Convolution groups of perverse sheaves on abelian varieties**, *Paris Arithmetic Homotopic Galois Theory Days 2025*, IMJ-PRG, Paris
- Aug. 2025 **Specialization of Néron-Severi groups of normal varieties**, *USTC*, Hefei, China
- Aug. 2025 **Convolution groups of perverse sheaves on abelian varieties**, *SIMIS and East China Normal University*, Shanghai, China
- Feb. 2025 **Convolution groups of perverse sheaves on abelian varieties**, *AHGT Seminar*
- Oct. 2024 **Fourier-Mukai transform on complex tori**, *Séminaire Arithmétique et géométrie algébrique*, Université de Strasbourg, France
- Oct. 2024 **Convolution groups and monodromy groups on abelian varieties**, *p -adic heights and p -adic L -functions learning seminar*, University of Haifa, Israel
- Sep. 2024 **Convolution of perverse sheaves on abelian varieties**, *USTC*, China
- Nov. 2023 **Monodromy group and sheaf convolution group**, *Séminaire Arithmétique et géométrie algébrique*, IRMA, Strasbourg
- Jun. 2023 **Fourier-Mukai transform on complex tori**, *Humboldt Arithmetic Geometry Seminar and Séminaire Mathjeunes*, Humboldt University and Sorbonne University, Berlin and Paris
- Jun. 2023 **Group extensions of complex Lie groups**, *Séminaire des Thésards*, IMJ-PRG, Paris
- Nov. 2022 **Generic vanishing theorem for Fujiki class C** , *Séminaire Mathjeunes*, Sorbonne University, Paris
- Feb. 2022 **Ullmo-Yafaev's alternative about rational points on Shimura varieties**, *Séminaire Mathjeunes*, Sorbonne University, Paris
- [Expository talks](#)
- Oct. 2023 **"Arithmetic finiteness of very irregular varieties" after Krämer-Maculan**, *Arithmetic Geometry Preprint Seminar*, IMJ-PRG, Sorbonne Université
- Aug. 2023 **Three talks on "Rational Points and Geometry"**, *Seminars for young researchers*, RIMS, Kyoto University
- Jan. 2022 **La conjecture André-Oort pour un produit des courbes**, *Groupe de travail "La Conjecture André-Oort"*, IMJ-PRG, Paris
- Mar. 2021 **Proof of Uniform Open Image Theorem (after Cadoret-Tamagawa)**, *Groupe de travail "Points rationnels et uniformités"*, IMJ-PRG, Paris
- Oct. 2020 **Uniformity of Rational Points under Lang Conjecture (after Caporaiso-Harris-Mazur)**, *Groupe de travail "Points rationnels et uniformités"*, IMJ-PRG, Paris
- Jul. 2020 **A p -adic approach to Mordell Conjecture (after Lawrence-Venkatesh)**, *mémoire de M2*, Score: 19/20, under the supervision of Anna Cadoret

Awards

- 2019 Guo Moruo Scholarship
- 2018 14th place in International Mathematics Competition for University Students
- 2018 Bronze medal in Analysis, the 9th Shing-Tung Yau College Student Mathematics Contests

2018 First prize in the 9th Mathematics competition of Chinese College Students

Teaching

2022 **Chargé de colles**, *Algèbre et Analyse*, Université de Paris

2021 **Chargé de TD**, *Mathématiques 3*, Université de Paris

2018 **Teaching assistant**, *Linear Algebra I*, USTC

2017 **Teaching assistant**, *Linear Algebra II*, USTC