$Zeyu \ Wang$

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Contact

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Mathematical Interests

I am interested in geometric representation theory, number theory, and algebraic geometry. Currently, I am working towards understanding intersection number of special cycles on the moduli of shtukas via (relative) geometric Langlands.

Advisor

Zhiwei Yun

Education

2019-2023, B.S. in Mathematics, Peking University. 2023-current, Ph.D. in Mathematics, Massachusetts Institute of Technology.

Awards

2018, Gold Medal, 59th International Mathematical Olympiad. 2022, Gold Medal, Algebra, Number Theory and Combinatorics, 13th S.-T.Yau college students mathematics contest.

2022, Gold Medal, Team Medals, 13th S.-T.Yau college students mathematics contest.

Prepublications

Higher Period Integrals and Derivatives of L-functions (joint with Shurui Liu), preprint on arXiv, https://arxiv.org/abs/2504.00275.

Appendix to "On the relative Langlands duality for $\text{Sp}_{2n} \setminus \text{GL}_{2n+1}$ " by Guodong Xi and Weixiao Lu, preprint on arXiv, https://www.arxiv.org/abs/2504.18774.

Research Talks

April 2025, *Higher Derivatives of L-functions via Rankin-Selberg convolution*, at UChicago Representation Theory Seminar.

July 2025, *Higher Derivatives of L-functions via Rankin-Selberg convolution*, at Shanghai Institute for Mathematics and Interdisciplinary Sciences.

Conferences

2021, Summer School on Theta Correspondence, Suzhou University.

2021, Summer School on Algebraic Geometry, Fudan University.

2022, Arizona Winter School: Automorphic Forms Beyond GL(2), Virtual Participant.

2022, IHES Summer School on the Langlands Program, Virtual Participant.

2023, Summer School on Geometric Representation Theory and Applications, Tsinghua University.

2023, Workshop on Geometric Representation Theory and Moduli Spaces, University of North Carolina at Chapel Hill.

2023, Monodromy and Applications, Princeton University.

2024, Relative Langlands Duality, University of Minnesota Twin Cities.

2024, The Los Angeles Workshop on Representations and Geometry, University of South California.

2024, Clay Mathematics Institute Workshop, New Advances in the Langlands Program: Geometry and Arithmetic, University of Oxford.

2024, Representation Theory Days, MIT.

2025, Arizona Winter School: p-adic Groups, University of Arizona.

2025, *Beijing-Shanghai Summer School in Mathematics*, Shanghai Institute for Mathematics and Interdisciplinary Sciences.

Seminar Talks

2022, Vector Bundles on the Fargues-Fontaine Curve, Peking University.

2022, Intersection Theory, seminar talk, Peking University.

2022, Intersection Numbers on Deligne-Lusztig Varieties, Peking University.

2022, Locally Analytic Representations, Peking University.

2022, Non-abelian Hodge via Moduli Spaces, Peking University.

- 2022, Positive Characteristic Approach to the P=W Conjecture, Peking University.
- 2023, Excursion Operators, Peking University.
- 2023, Fargues' Conjecture, Peking University.
- 2023, Integral Hecke Operators, Peking University.
- 2023, Dual Group of Spherical Varieties, Harvard University.
- 2023, Smooth representations of $GL_n(\mathbb{Q}_p)$, MIT.
- 2024, Wakimoto modules, MIT.
- 2024, Irreducible Components of Affine Deligne-Lusztig Varieties, MIT.
- 2024, Proof of the Arithmetic Inner Product Formula, MIT.
- 2025, Coherent Springer Theory, MIT.