Zhijia Zhang

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Education

New York University	**New York, NY**
Ph.D. candidate in Mathematics	2021 – present
New York University Shanghai	**Shanghai, China**
B.S. in Honors Mathematics	2017 – 2021

Publications (in reverse chronological order)

1. Computing the equivariant Brauer group   to appear
   (with A. Pirutka)
   International Journal of Mathematics, 40 pp.

2. Modular symbols and equivariant birational invariants   2025
   Journal of Number Theory **271**, 308–327.

3. Rationality of forms of $\overline{\mathcal{M}}_{0,n}$ 2025
   (with B. Hassett and Yu. Tschinkel)
   Journal of the London Mathematical Society **111**(2):e70097, 35 pp.

4. Equivariant geometry of singular cubic threefolds   2025
   (with I. Cheltsov and Yu. Tschinkel)
   Forum of Mathematics. Sigma **13**:e9, 52 pp.

5. Equivariant geometry of the Segre cubic and the Burkhardt quartic   2025
   (with I. Cheltsov and Yu. Tschinkel)
   Selecta Mathematica **31**(1):7, 36 pp.

6. Equivariant birational geometry of linear actions   2024
   (with Yu. Tschinkel and K. Yang)
   EMS Surveys in Mathematical Sciences **11**(2), 235–276.

7. Combinatorial Burnside groups   2022
   (with Yu. Tschinkel and K. Yang)
   Research in Number Theory **8**(2):33, 17 pp.

Preprints

8. Equivariant unirationality of Fano threefolds   2025
   (with I. Cheltsov and Yu. Tschinkel), 30 pp., *submitted*

9. Rationality of singular cubic threefolds over $\mathbb{R}$ 2024
   (with I. Cheltsov and Yu. Tschinkel), 27 pp., *submitted*

10. Birational invariants of volume preserving maps   2024
    (with K. Loginov), 34 pp., *submitted*

11. Stable equivariant birationalities of cubic and degree 14 Fano threefolds   2024
   (with Yu. Tschinkel), 22 pp., *submitted*

12. Equivariant geometry of singular cubic threefolds, II   2024
   (with I. Cheltsov, L. Marquand and Yu. Tschinkel), 51 pp., *submitted*

Other writing

1. Equivariant geometry of singular cubic threefolds, *ZAG report*, 5 pp.   2024

Awards

Charles Newman Fellowship, NYU Courant   2025
awarded each year to one or two outstanding Mathematics PhD students

Wilhelm T. Magnus Memorial Prize, NYU Courant   2024
awarded for significant contributions to the Mathematical Sciences

MacCracken Doctoral Fellowship, NYU   2021–2026

Conference talks

Krakow, Poland, Structures and Symmetries in Algebraic Geometry (upcoming)   2025

University of Hawaii, Polarized Varieties and Their Applications (upcoming)   2025

CIRM, Marseille, Cremona Groups (upcoming)   2025

University of Miami, New Developments of Birational Geometry   2025

UCSD, Conference on K-stability and Moduli of Varieties (short talk)   2025

ICMS Edinburgh, Birational Geometry and Number Theory   2024

Boston College, Algebraic Geometry Northeastern Series (short talk)   2024

Princeton University, Monodromy and Its Applications (lightning talk)   2023

Seminar talks

UIUC, Algebraic Geometry Seminar (upcoming)   2025

CUNY Graduate Center, Commutative Algebra and Algebraic Geometry Seminar   2025

Princeton University, Algebraic Geometry Seminar   2025

University of Nottingham, Pure Mathematics Seminar   2024

Imperial College London, Algebraic Geometry Seminar   2024

NYU, Algebraic Geometry Seminar   2024

Conferences

Duke University, The Fifth Duke Mathematical Journal Conference (upcoming)   2025

Simons Foundation, Conference on Arithmetic Geometry, Group Actions and Rationality Problems   2024

Stony Brook University, Conference on Higher Dimensional Geometry   2024

University of Miami, Higher Invariants in Equivariant and Geometric Topology   2023

Stony Brook University, Algebraic Geometry Northeastern Series (AGNES)   2023

Simons Foundation, Conference on Higher Dimensional Geometry   2022
presented a poster

PCMI Graduate Summer School: Number Theory Informed by Computation   2022

Teaching

New York University

Teaching assistant, MATH-UA.0343 Algebra I	Spring 2025
Teaching assistant, MATH-UA.0348 Honors Algebra I	Fall 2024
Grader, MATH-GA.2140 Algebra II	Spring 2024, 2025
Instructor, Complex Variables Written Exam Workshop	January 2024
Grader, MATH-GA.2210 Introduction to Number Theory	Spring 2023, 2024
Grader, MATH-GA.2130 Algebra I	Fall 2022, 2023

Services

PhD student survey committee, NYU Courant	2024–2025
Co-organizer, Graduate Student and Postdoc Seminar, NYU Courant	2021–2023

Relevant skills

Languages: Chinese, English

Softwares: `Magma`, `GAP`