Yuki Mizuno

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Employment

Lecturer at Waseda University – Tokyo-Japan	Apr 2025 – present
Assistant Professor at Waseda University – Tokyo-Japan	Oct 2024 – Mar 2025
Research Assistant at Waseda University – Tokyo, Japan	Apr 2024 – Sept 2024

Education

Waseda University, PhD in Mathematics – Tokyo, Japan   Apr 2020 – Sept 2024
- Ph.D Thesis: Moduli stacks of torsion-free sheaves on K3 surfaces and noncommutaive projective Calabi-Yau schemes
- Advisor: Hajime Kaji

Waseda University, MS in Mathematics – Tokyo, Japan   Apr 2018 – Mar 2020
- Master Thesis: Irreducible components of the moduli stack of torsion-free sheaves of K3 surfaces and their dimensions
- Advisor: Hajime Kaji

Waseda University, BA in Mathematics – Tokyo, Japan   Apr 2014 – Mar 2018
- Advisor: Hajime Kaji

Research Interests

- Moduli spaces of sheaves, Derived categories
- Noncommutative algebraic geometry / Generalized complex geometry
- Calabi-Yau manifolds, Mirror symmetry

Teaching Experience

Waseda University   Apr 2025 – present
- Lecturer for Linear Algebra (year-long course)
- Lecturer for Fundamentals of Mathematics (spring semester)

Josai University   Oct 2024 – present
- Part-time lecturer for Elementary Analysis (calculus, every fall semester)

Grants and Fellowship

JSPS Grant-in-Aid for Research Activity Start-up   Sept 2024 – present
- Research project: Noncommutative algebraic geometry aspects of Calabi-Yau varieties

JSPS Research Fellowship for Young Scientists (DC2)   Apr 2022 – Mar 2024
- Research project: Moduli spaces of sheaves on K3 surfaces

Papers and Preprints

Dualizing complexes over Z-algebras   Sept 2025
Yuki Mizuno
arXiv:2509.13073

Bridgeland Stability of Sheaves on del Pezzo Surface of Picard Rank Three   Feb 2025
Yuki Mizuno, Tomoki Yoshida
arXiv:2502.18894

Bondal-Orlov's Reconstruction Theorem in Noncommutative Projective Geometry   Nov 2024

Some Examples of Noncommutative Projective Calabi–Yau Schemes   Feb 2024

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Classifying the Irreducible Components of Moduli Stacks of Torsion-Free   Sept 2022
Sheaves on K3 Surfaces and an Application to Brill-Noether Theory

An Explicit Construction of Derived Moduli Stacks of Harder-Narasimhan Fil-   Feb 2022
trations

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Ongoing Projects

- The Projectivity of Bridgeland Moduli Spaces of del Pezzo Surface of Picard Rank Three (joint work with Tomoki Yoshida)

Talks (Invited or Contributed)

- Bondal-Orlov's reconstruction theorem in noncommutative projective geometry, 2025 Summer Research Institute in Algebraic Geometry, Colorado State University, July 14 to August 1, 2025 (Flash Talk)

- Bondal-Orlov's reconstruction theorem in noncommutative projective geometry, Calabi-Yau Varieties and Related Topics 2025, Tsuda University, July 5 to July 6, 2025

- Bondal–Orlov's Reconstruction Theorem in Noncommutative Projective Geometry, The Mathematical Society of Japan, Spring Meeting 2025, Waseda University, March 2025

- Bondal–Orlov's Reconstruction Theorem in Noncommutative Projective Geometry, The 21st Mathematics Conference for Young Researchers, Hokkaido University, March 2025

- Bridgeland Moduli Spaces of a del Pezzo Surface of Picard Rank 3, 5th Utsunomiya University Algebraic Geometry Workshop, Utsunomiya University, August 2024

- Some Examples of Noncommutative Projective Calabi-Yau Schemes, Osaka Algebraic Geometry Seminar, Osaka University, November 2023

- The Projectivity of Bridgeland Moduli Spaces of del Pezzo Surface of Picard Rank Three (Poster), Derived Categories, Moduli Spaces, and Counting Invariants, Imperial College London, July 2023

- Some Examples of Noncommutative Projective Calabi-Yau Schemes, Singularity Seminar, Nihon University, June 2023

- Some Examples of Noncommutative Projective Calabi-Yau Schemes, Tohoku Algebra Seminar, Tohoku University, May 2023

- Some Examples of Noncommutative Projective Calabi-Yau Schemes, 27th Algebra Workshop for Young Researchers, Tsukuba University, March 2023

- Some Examples of Noncommutative Projective Calabi-Yau Schemes, 10th (Non)commutative Algebra and Topology Workshop, Shinshu University, March 2023

- Some Examples of Noncommutative Projective Calabi-Yau Schemes, Annual Meeting of the Mathematical Society of Japan 2023, Chuo University, March 2023

- Some Examples of Noncommutative Projective Calabi-Yau Schemes, 4th Utsunomiya Algebraic Geometry Workshop, Utsunomiya University, March 2023

- An Explicit Construction of Derived Moduli Stacks of Harder-Narasimhan Filtrations, Annual Meeting of the Mathematical Society of Japan 2022, March 2022

- An Explicit Construction of Derived Moduli Stacks of Harder-Narasimhan Filtrations, 3rd Utsunomiya Algebraic Geometry Workshop, Online, March 2022

- An Explicit Construction of Derived Moduli Stacks of Harder-Narasimhan Filtrations, 18th Mathematics Workshop for Young Researchers, Online, March 2022

- Classifying the Irreducible Components of Moduli Stacks of Torsion-Free Sheaves on K3 Surfaces and an Application to Brill-Noether Theory, Annual Meeting of the Mathematical Society of Japan 2021, Online, March 2021

- Classifying the Irreducible Components of Moduli Stacks of Torsion-Free Sheaves on K3 Surfaces and an Application to Brill-Noether Theory, 4th Mathematical Seminar for New Researchers, Online, February 2021

- Classifying the Irreducible Components of Moduli Stacks of Torsion-Free Sheaves on K3 Surfaces and an Application to Brill-Noether Theory, Kinosaki Symposium on Algebraic Geometry 2020, Online, October 2020

- On the Dimension of Algebraic Stacks - Motivated by Moduli Spaces of Sheaves and Vector Bundles, 2nd Utsunomiya Algebraic Geometry Workshop, Utsunomiya University, September 2019

Conferences and Seminars (co-)organized

- The 5th Utsunomiya University Symposium on Algebraic Geometry, Utsunomiya University, August 21 – 23, 2024

- Seminar on Algebraic Geometry at Waseda University ("Miyako no Seihoku" Seminar) , 2024 May - Present

- The 28th Young Algebraists' Workshop, Waseda University, February 27 – March 1, 2024

- The 4th Utsunomiya University Symposium on Algebraic Geometry, Utsunomiya University, February 28 – March 2, 2023