Yuki Mizuno

Utrecht, Netherlands | y.mizuno@uu.nl | ymizuno728.github.io/homepage

Employment

Postdoctoral Researcher, Utrecht University – Utrecht, Netherlands — Feb 2026 – present
In the research group of Pieter Belmans

Assistant Professor, Waseda University – Tokyo, Japan — Oct 2024 – Jan 2026

Research Assistant, 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 noncommutative projective Calabi-Yau schemes
- Advisor: Hajime Kaji

Waseda University, MS in Mathematics – Tokyo, Japan — Apr 2018 – Mar 2020

- Master's 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
- Derived algebraic geometry

Teaching Experience

Lecturer, Waseda University — Apr 2025 – Jan 2026

- Lecturer for Linear Algebra (year-long course)
- Lecturer for Fundamentals of Mathematics (spring semester)

Part-time Lecturer, Josai University — Oct 2024 – Jan 2026

- Part-time lecturer for Elementary Analysis (calculus, every fall semester)

Grants and Fellowship

JSPS Grant-in-Aid for Research Activity Start-up — Sept 2024 – Jan 2026

- 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

Published Papers

Dualizing complexes over Z-algebras July 2026
Yuki Mizuno
10.1016/j.jalgebra.2026.07.027 (J. Algebra vol. 711, pp. 530-589)

Some Examples of Noncommutative Projective Calabi-Yau Schemes Feb 2024
Yuki Mizuno
10.4153/S0008439524000110 (Canad. Math. Bull. vol. 67, pp. 706-726)

Classifying the Irreducible Components of Moduli Stacks of Torsion-Free Sheaves on K3 Surfaces and an Application to Brill-Noether Theory Sept 2022
Yuki Mizuno
10.1016/j.geomphys.2022.104607 (J. Geom. Phys.)

Preprints

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
Yuki Mizuno
(arXiv:2411.07813)

An Explicit Construction of Derived Moduli Stacks of Harder-Narasimhan Filtrations Feb 2022
Yuki Mizuno
(arXiv:2202.07494)

Ongoing Projects

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

Talks

- Bondal–Orlov's reconstruction theorem in noncommutative projective geometry, Tokyo-Nagoya Algebra Seminar, Online, May 27, 2026
- Bondal-Orlov's reconstruction theorem in noncommutative projective geometry, Disquisitions on Monoidal Categories and Operads, BIMSA, April 13, 2026
- Bondal-Orlov's reconstruction theorem in noncommutative projective geometry, Algebraic Geometry Seminar, Utrecht University, March 10, 2026
- Bondal-Orlov's reconstruction theorem in noncommutative projective geometry, Paris algebra seminar, Institut Henri Poincaré, February 23, 2026
- Bondal-Orlov's reconstruction theorem in noncommutative projective geometry, Deformations and Birational Geometry of Algebraic Varieties, RIMS, January 19 to January 23, 2026
- Bondal-Orlov's reconstruction theorem in noncommutative projective geometry, Workshop on Mirror symmetry and Related Topics, Kyoto 2025, Kyoto University, December 15 to December 19, 2025
- 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

Organization

- Algebraic Geometry Seminar at Utrecht University, September 2026 – Present
- 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), April 2024 – January 2026
- 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