

# Yuki Mizuno

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## Employment

<b>Postdoctoral researcher at Utrecht University – Utrecht, Netherlands</b> (In the research group of Pieter Belmans)	Feb 2026 – present
<b>Assistant Professor at Waseda University – Tokyo, Japan</b>	Oct 2024 – Jan 2026
<b>Research Assistant at Waseda University – Tokyo, Japan</b>	Apr 2024 – Sept 2024

## Education

<b>Waseda University</b> , PhD in Mathematics – Tokyo, Japan • Ph.D Thesis: Moduli stacks of torsion-free sheaves on K3 surfaces and noncommutative projective Calabi-Yau schemes • Advisor: Hajime Kaji	Apr 2020 – Sept 2024
<b>Waseda University</b> , MS in Mathematics – Tokyo, Japan • Master Thesis: Irreducible components of the moduli stack of torsion-free sheaves of K3 surfaces and their dimensions • Advisor: Hajime Kaji	Apr 2018 – Mar 2020
<b>Waseda University</b> , BA in Mathematics – Tokyo, Japan • Advisor: Hajime Kaji	Apr 2014 – Mar 2018

## Research Interests

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

## Teaching Experience

<b>Waseda University</b> • Lecturer for Linear Algebra (year-long course) • Lecturer for Fundamentals of Mathematics (spring semester)	Apr 2025 – Jan 2026
<b>Josai University</b> • Part-time lecturer for Elementary Analysis (calculus, every fall semester)	Oct 2024 – Jan 2026

## Grants and Fellowship

<b>JSPS Grant-in-Aid for Research Activity Start-up</b> • Research project: Noncommutative algebraic geometry aspects of Calabi-Yau varieties	Sept 2024 – Jan 2026
<b>JSPS Research Fellowship for Young Scientists (DC2)</b> • Research project: Moduli spaces of sheaves on K3 surfaces	Apr 2022 – Mar 2024

## Papers and Preprints

<b>Dualizing complexes over Z-algebras</b> Yuki Mizuno arXiv:2509.13073	Sept 2025
<b>Bridgeland Stability of Sheaves on del Pezzo Surface of Picard Rank Three</b> Yuki Mizuno, Tomoki Yoshida arXiv:2502.18894	Feb 2025

- Bondal-Orlov's Reconstruction Theorem in Noncommutative Projective Geometry** Nov 2024  
Yuki Mizuno  
arXiv:2411.07813
- Some Examples of Noncommutative Projective Calabi-Yau Schemes** Feb 2024  
Yuki Mizuno  
<https://doi.org/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  
<https://doi.org/10.1016/j.geomphys.2022.104607> (J. Geom. Phys.)
- An Explicit Construction of Derived Moduli Stacks of Harder-Narasimhan Filtrations** Feb 2022  
Yuki Mizuno  
arXiv:2202.07494

## Ongoing Projects

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

## Talks (Invited or Contributed)

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- 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

### **Conferences and Seminars (co-)organized**

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- 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