

# Arkadij Bojko

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orcid.org/0000-0003-1530-2418 : ORCID

preferred pronouns - he, him, his

## LANGUAGES

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- **Czech, Russian:** native
- **English:** TOEFL 119/120
- **German:** ÖSD Zertifikat C2

## EDUCATION

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### University of Oxford

DPhil in Mathematics

2018–2021

- Thesis: *Wall-crossing and orientations for invariants counting coherent sheaves on CY fourfolds*
- supervised by Dominic Joyce

### University of Vienna

M.Sc. in Mathematics

2017–2018

- Thesis: *Stability conditions on quivers and semistable noncommutative curve counting*
- supervised by Ludmil Katzarkov and George Dimitrov

### University of Vienna

M.Sc. in Physics

2016–2018

- Thesis: *Geometry of Twisted D-branes in Group Manifolds*
- supervised by Stefan Fredenhagen

### University of Vienna

B.Sc. in Physics

2013–2016

- Thesis: *Lovelock Theory*
- supervised by Piotr Chrusciel

## EMPLOYMENT

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- **Academia Sinica** Institute Research Scholar (5 years) since 2023
- **ETH Zürich** Postdoctoral researcher, mentored by Rahul Pandharipande 2021–2023

## REFERENCES

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- [10] A. Bojko, W. Lim, and M. Moreira, *Virasoro constraints for moduli of sheaves and vertex algebras*, Invent. Math. **236** (2024), no. 1, 387–476.
- [9] A. Bojko, *Wall-crossing for stable pairs on Calabi–Yau fourfolds*, 2024, in preparation.
- [8] A. Bojko, *Wall-crossing for Calabi–Yau fourfolds and applications*, 2024, in preparation.
- [7] A. Bojko, *Application of Lagrange inversion to wall-crossing for Quot schemes on surfaces*, Port. Math. **81** (2024), no. 1-2, 97–106.

- [6] A. Bojko and J. Huang, *Equivariant Segre and Verlinde invariants for Quot schemes*, 2023, arXiv preprint, passed the quick opinions stage in Moduli, <https://arxiv.org/abs/2303.14266>.
- [5] A. Bojko, *Universal Virasoro constraints for quivers with relations*, 2023, arXiv preprint, submitted to a journal, <https://arxiv.org/abs/2310.18311>.
- [4] A. Bojko, *Wall-crossing for zero-dimensional sheaves and Hilbert schemes of points on Calabi–Yau 4-folds*, 2021, arXiv preprint, accepted for publication in Adv. Math., <https://arxiv.org/abs/2102.01056>.
- [3] A. Bojko, *Wall-crossing for punctual Quot-schemes*, 2021, arXiv preprint, submitted to a journal, <https://arxiv.org/abs/2111.11102>.
- [2] A. Bojko, *Orientations for DT invariants on quasi-projective Calabi-Yau 4-folds*, Adv. Math. **388** (2021), Paper No. 107859, 59.
- [1] A. Bojko and G. Dimitrov, *Non-commutative counting and stability*, 2019, arXiv preprint, submitted to a journal, <https://arxiv.org/abs/1911.00074>.

## DISTINCTIONS

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|---|-----------|
| • Institute Research Scholarship at Academia Sinica   | 2023-2028 |
| • Commendation for my PhD thesis from Merton College  | 2021      |
| • Commendation for my PhD thesis from the Division of Mathematical, Physical and Life Sciences Graduate School Office | 2021      |
| • Clarendon Scholarship at the University of Oxford   | 2018–2021 |
| • University of Vienna, Department of Physics Dean’s list (Master’s program)  | 2016–2018 |
| • Performance scholarship of the University of Vienna   | 2013–2017 |

## COOPERATION PARTNERS

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- **Previous:** George Dimitrov, Woonam Lim, Miguel Morreira, Jiahui Huang
- **Current:** Emile Bouaziz, Henry Liu, Georg Oberdieck

## MOST IMPORTANT TALKS

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- Universal Virasoro Constraints for Quivers with Relations, University of Vienna, Special Algebraic Geometry Seminar, December 2023.
- Wall-crossing for Calabi–Yau fourfolds and applications, University of Oslo, Oslo STEW 2023, December 2023.
- Equivariant Segre and Verlinde series for Quot-schemes, Stockholm University, Algebra and geometry seminar, March 2023.
- An intuitive approach for sheaf-theoretic Virasoro constraints, Academia Sinica, Algebraic geometry seminar, February 2022.
- Wall-crossing for Calabi–Yau fourfolds and applications, University of Oxford, Simon’s Collaboration Meeting: Algebraic Geometry, Gauge Theory and the Swampland Conjectures, January 2023.
- Wall-crossing for Virasoro constraints, Utrecht University, Utrecht Geometry Center Seminar, November 2022.
- Virasoro for moduli of sheaves: the wall-crossing, Diablerets, Helvetic Algebraic Geometry Seminar, June 2022.
- Wall-crossing for Hilbert schemes of fourfolds and Quot-schemes of surfaces, Imperial College London, The London geometry and topology seminar, June 2021

- Wall-crossing for Hilbert schemes on CY 4-folds I & II, ETH, Algebraic geometry and moduli seminar, March 2021.
- Orientations for DT invariants on quasi-projective Calabi–Yau 4-folds, Nottingham, Algebraic geometry seminar, November 2020.

## IMPORTANT UPCOMING TALKS

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- The Hong Kong University of Science and Technology, May 2024.
- Kavli Institute for the Physics and Mathematics of the Universe, July 2024.
- Korea Institute for Advanced Study, July 2024.
- Heidelberg University, August 2024.
- The University of Edinburgh, August 2024.

## TEACHING AND ORGANIZING

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| • <b>Seminar organizer</b> at Academia Sinica<br><i>Algebraic Geometry Seminar</i>                      | Since 2023       |
| • <b>Instructor</b> at ETH Zürich<br><i>Derived Algebraic Geometry</i>                                  | Spring term 2023 |
| • <b>Instructor</b> at ETH Zürich<br><i>Derived Algebraic Geometry</i>                                  | Spring term 2022 |
| • <b>Lunch-seminar organizer</b> at ETH Zürich<br><i>Scattering diagrams</i>                            | Winter term 2021 |
| • <b>Tutor</b> at the University of Oxford<br><i>String Theory I (two separate classes)</i>             | Hilary 2021      |
| • <b>Tutor</b> at the University of Oxford<br><i>Infinite Groups</i>                                    | Michaelmas 2020  |
| • <b>Tutor for Merton College</b> at the University of Oxford<br><i>Projective Geometry</i>             | Trinity 2020     |
| • <b>Teaching assistant</b> at the University of Oxford<br><i>Algebraic Topology</i>                    | Michaelmas 2018  |
| • <b>Teaching Assistant</b> at the University of Oxford<br><i>Introduction to Representation Theory</i> | Michaelmas 2018  |

## SUPERVISION AND MENTORING

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| • <b>Yifan Zhao</b> Master's thesis: Pair-counting theories for local Calabi–Yau fourfolds        | 2021–2022 |
| • <b>Huang Jiahui</b> Master's thesis: Equivariant Segre and Verlinde invariants for Quot schemes | 2022–2023 |