# Yusuf Barış Kartal

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| CONTACT INFORMATION | School of Mathematics<br>University of Edinburgh<br>Peter Guthrie Tait Road<br>Edinburgh, EH9 3FD<br>United Kingdom | Email:ykartal@ed.ac.uk |

**FIELDS OF INTEREST**

Symplectic topology, mirror symmetry, homotopy theory, non-commutative geometry, algebraic geometry

**EMPLOYMENT**

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|---|---|
| University of Edinburgh, Research associate | Sept 2022– |
| Princeton University, Instructor of Mathematics | 2019-2022 |

**EDUCATION**

Massachusetts Institute of Technology     2014-2019

Ph.D. in Mathematics

- Dissertation topic: Distinguishing open symplectic mapping tori via their wrapped Fukaya categories
- Advisor: Paul Seidel
- Exchange scholar at Princeton University (Spring 2017) and Columbia University (Fall 2017)

Middle East Technical University     2009-2014

B.S. in Mathematics

- GPA : 4.00/4.00
- Exchange student at UC Berkeley (2012-2013)

**PAPERS AND PREPRINTS**

Y. B. Kartal, *Dynamical invariants of mapping torus categories*, Advances in Mathematics 389 (2021) 107882.

Y. B. Kartal, *Distinguishing open symplectic mapping tori via their wrapped Fukaya categories*, Geometry & Topology 25 (2021) 1551-1630.

Y. B. Kartal, *Iterations of symplectomorphisms and p-adic analytic actions on Fukaya category*, submitted, arXiv:2008.08566.

L. Côté and Y. B. Kartal, *Categorical action filtrations via localization and the filtration growth as a symplectic invariant*, Journal für die reine und angewandte Mathematik (Crelles Journal) (2023).

Y. B. Kartal, *Algebraic sheaves of Floer homology groups via algebraic torus actions on the Fukaya category*, arXiv:2109.12256.

L. Côté and Y. B. Kartal, *Equivariant Floer homotopy via Morse-Bott theory*, arXiv:2309.15089.

L. Côté and Y. B. Kartal, *Recovering generalized cohomology from Floer homology: the complex oriented case*, draft available at ybkartal.github.io/recoverycxoriented.pdf.

**EXPOSITORY PAPERS**

Y. B. Kartal, *A Survey of Singular Reduction*, available at https://math.berkeley.edu/ alanw/kartalsurvey.pdf.

**INVITED TALKS**

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| CMSA Mathematical Physics Seminar, Harvard | Nov 13, 2017 |
| Berkeley Topology Seminar | Oct 3, 2018 |
| Stanford Symplectic Geometry Seminar | Oct 8, 2018 |
| Harvard Student/Postdoc Symplectic Geometry Seminar | Oct 12, 2018 |

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| Columbia Symplectic Geometry, Gauge Theory, and Categorification Seminar | Oct 19, 2018 |
| Informal Seminar at King's College London | Oct 23, 2018 |
| Cambridge Algebraic Geometry Seminar | Oct 24 2018 |
| IAS/Princeton Symplectic geometry seminar, Princeton | Nov 12, 2018 |
| CMSA Mathematical Physics Seminar, Harvard | Nov 19 2018 |
| Stony Brook Symplectic Geometry Seminar | Feb 14, 2019 |
| USC Geometry&Topology Seminar | Apr 19, 2019 |
| Current Trends in Symplectic Topology, Montréal | July 11, 2019 |
| Conference on Fukaya Category and Homological Mirror Symmetry, Beijing | Aug 15, 2019 |
| Rutgers geometry symmetry and physics seminar (online) | June 11, 2020 |
| Free Mathematics Seminar (online) | Aug 4, 2020 |
| UCGEN (Uluslarası Cebirsel Geometri Neşesi) (online) | Aug 26, 2020 |
| Western Hemisphere Virtual Symplectic Seminar (online) | Oct 23, 2020 |
| Symplectic Zoominar (CRM-Montréal, Princeton/IAS, Tel Aviv, and Paris) (online) | Feb 5, 2021 |
| RANT (Representation and Number Theory Seminar) (online, Hong Kong time) | Feb 9, 2021 |
| EDGE (Edinburg Hodge Seminar) (online) | Apr 28, 2021 |
| HUJI Topology and geometry seminar (online) | Nov 9, 2021 |
| USC Topology seminar | Mar 7, 2022 |
| Recent developments in Lagrangian Floer theory, Simons Center | Mar 16, 2022 |
| Joint Mathematics Meetings: AMS Special Session on Quantum Categorical Structures in Mirror Symmetry (online) | Apr 6, 2022 |
| University of Maryland Informal geometric analysis seminar | Apr 26, 2022 |
| Symplectic versus algebraic geometry, Warwick (online talk) | Jun 1, 2022 |
| The London geometry and topology seminar | Oct 28, 2022 |
| EDGE seminar, Edinburgh | Dec 7, 2022 |
| Yeditepe mathematics seminars (online talk) | Dec 16, 2022 |
| Feza Gürsey Center for Physics and Mathematics Higher Structures Seminars (online talk) | Feb 21, 2023 |
| Columbia Symplectic Geometry, Gauge Theory, and Categorification Seminar (online talk) | Apr 21, 2023 |
| Scottish topology seminar, Aberdeen | May 3, 2023 |
| Gökava geometry and topology conference, Gökova | Jun 2, 2023 |
| Bonn symplectic geometry seminar, Bonn | Sept 12, 2023 |
| Southampton Pure Maths Colloquium, Southampton | Dec 1, 2023 |
| MPIM Extra Talk, Bonn | Dec 14, 2023 |
| UPenn Special Colloquium, Philadelphia | Dec 18, 2023 |
| Symplectic Zoominar (online) | Dec 22, 2023 |
| Koç University Math Seminar, İstanbul (upcoming) | Jan 4, 2024 |

TEACHING

**University of Edinburgh**

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| MATH10079 (Group theory, with David Jordan) | Fall 2023 |

**Princeton University**

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| MAT201 (Multivariable calculus) | 2019-2020, Spring 2022 |
| MAT469 (Advanced topology) | Fall 2020 |
| MAT202 (Linear Algebra) | Spring 2021, Fall 2021 |

**MIT**

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| Recitation instructor for 18.01 (Calculus) | Fall 2016 |
| Recitation instructor for 18.03 (Differential equations) | Spring 2018 |

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| MENTORING | Research Science Institute mentor (high school research program) for Aknazar Kazhymurat | Summer 2018 |
| HONOURS AND AWARDS | Akamai Presidential Graduate Fellowship | 2014—2015 |
| | METU highest ranking student of the graduating class | 2014 |
| | METU Outstanding Success Scholarship | 2009—2014 |
| | TÜBİTAK Turkish Science and Research Council Scholarship | 2009—2014 |
| | Türkiye İş Bankası Golden Youth Award, due to success in University Entrance Examination | 2009 |
| ORGANIZATIONAL ACTIVITIES | Co-organizer for the Princeton/IAS joint symplectic seminar | 2021-2022 |
| | Co-organizer for the Symplectic Zoominar (CRM-Montréal, Princeton/IAS, Tel Aviv, and Paris) | 2020-2021 |
| | Organizer for the symplectic preprint seminar (Edinburgh) | Spring 2023 |
| | Co-organizer for the EDGE Geometry Seminar (Edinburgh) | 2023-2024 |
| LANGUAGES | Turkish (Native), English (Fluent), Persian (Beginner) | |
| CITIZENSHIP | Turkey | |