

Kostiantyn Tolmachov

Biographical

Born: November 5, 1991, Kyiv, Ukraine.

Citizenship: Ukraine.

Address

Perimeter Institute for Theoretical Physics.

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Research interests

Geometric methods in representation theory.

Publications

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| 2020 | Monodromic model for Khovanov-Rozansky homology, joint with R. Bezrukavnikov. arXiv:2008.11379 , 2020. |
| 2018 | Towards a functor between affine and finite Hecke categories in type A, Ph.D. thesis. |
| 2011 | Variance of Linear Statistic for Plancherel Young Diagrams. arXiv:1202.1806 , 2011. |
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Education

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| 2018 | Massachusetts Institute of Technology, Ph.D.. Thesis advisor: Roman Bezrukavnikov. |
| 2013 | National Research University Higher School of Economics, Department of Mathematics, B.Sc. |
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Employment

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| 2018 - present | Coxeter Postdoctoral Fellow, Perimeter Institute and University of Toronto. |
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Teaching

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| Spring 2020 | MAT344, Introduction to Combinatorics, University of Toronto, Instructor. |
| Spring 2019 | MAT136, Calculus, University of Toronto, Instructor. |
| Spring 2017 | 18.703, Modern Algebra, MIT, TA. |
| Spring 2017 | 18.702, Algebra II, MIT, TA. |

Fall 2016	18.022, Calculus, MIT, Recitation instructor.
Spring 2016	18.100B/1002, Real Analysis, MIT, TA.
Fall 2015	18.705, Commutative Algebra, MIT, TA.
Spring 2015	18.901, Introduction to Topology, MIT, TA.
Fall 2014	18.715, Introduction to Representation Theory, MIT, TA.
Fall 2013	Course “Introduction to dynamical systems”, HSE, lecturer.

Student mentoring

Summer 2016	UROP+, student: Yuzhou Gu, project: “Nilpotent Orbits: Geometry And Combinatorics”.
Fall 2015	undergraduate project, student: Jack Gurev, project: “Representation theory of symmetric groups, after Okounkov and Vershik”.
Summer 2015	UROP+, student: Arkadiy Frasinich, project: “The Image of Weyl Group Translations in Hecke Algebras”.
Summer 2015	UROP+, student: Semon Rezhnikov, project: “Singularity theory”.

Research talks at conferences and seminars

Spring 2020	Representation Theory and Mathematical Physics seminar, UC Berkeley
Spring 2020	Algebraic Geometry seminar, UC Davis
Summer 2019	Summer school “Geometric representation theory and low-dimensional topology”, ICMS, Edinburgh
Spring 2019	Algebra seminar, University of Georgia in Athens.
Fall 2018	AIM Workshop “Categorified Hecke algebras, link homology, and Hilbert schemes”, San Jose, California
Fall 2018	Mathematical Physics seminar, Perimeter Institute
Fall 2018	Geometric Representation Theory seminar, University of Toronto
Summer 2018	Derived Categories and Matrix Problems seminar, NASU Institute of Mathematics, Kyiv, Ukraine
Summer 2018	Mathematical Advances of The Last Decade, Anniversary Conference, HSE, Moscow
Spring 2018	Group Representation Theory and Applications seminar, MSRI
Spring 2018	Algebra and Discrete Mathematics seminar, UC Davis
Spring 2018	Geometry, Physics, and Representation Theory seminar, Northeastern University
Fall 2017	Representation Theory seminar, University of Massachusetts, Amherst.
Spring 2013	Arnold’s scholarship recipient’s lecture, HSE, Moscow.
Summer 2012	ICTP-ESF School and Conference in Dynamical Systems, ICTP, Trieste.
Spring 2011	Texas Ergodic Theory Workshop, University of Houston.

Organized activities

- 2012-2015 Student seminar in various mathematical topics, HSE.
Fall 2015 Graduate student Geometric Representation Theory seminar, MIT.

Grants and awards

- 2013 Arnold scholarship, National Research University Higher School of Economics.
2011 1st place, 15th All-Russian Möbius Contest, nomination "Undergraduates".
2008 Second diploma, All-Ukrainian Mathematical Olympiad.

Language knowledge

Ukrainian (native), Russian (native), English (fluent), Attic/Medieval Greek (reading)