

CURRICULUM VITAE

SVETLANA MAKAROVA

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EDUCATION

Massachusetts Institute of Technology (MIT), Cambridge, MA (2020 – expected)

GPA: 4.9/5.0

PhD in Mathematics

Higher School of Economics (HSE), Moscow, Russia (2017)

MS in Mathematics

Higher School of Economics (HSE), Moscow, Russia (2015)

BS in Mathematics

POSITIONS

Junior Research Assistant (June–August 2019), Moscow Institute of Physics and Technology, Moscow, Russia

Research Intern (October 2014–June 2015), International Laboratory of Representation Theory and Mathematical Physics, HSE, Moscow, Russia

SCHOLARSHIPS

Collamore-Rogers Fellowship, *academic year 2016–2017, web-page*;

Levinson Fellowship, *summer 2016 and summer 2017*;

The Silver Nestling scholarship, *September 2014–June 2017, web-page (in Russian), web-page (in English)*;

The Dobrushin's scholarship, *the first semester of the year 2014–2015, web-page (in Russian)*

MASTER THESIS

Fullness of an Exceptional Collection on a Certain Kronecker Moduli Space, scientific advisor A. Efimov

UNDERGRADUATE PROJECTS

Fourth year (degree paper): Exceptional Collections on Moduli Spaces of Representations of Quivers, scientific advisor A. Efimov;

Third year: Covariant Serre–Grothendieck Duality, scientific advisor L. Positselski;

Second year: S–A Duality, scientific advisor L. Positselski;

First year: Λ -calculus, scientific advisor L. Beklemishev

RESEARCH TALKS

- **Combinatorial constructions of derived autoequivalences of grassmannians** at Noncommutative deformations and moduli spaces, *November 19–23, 2018, Kavli IPMU*
- Poster **Fullness on Grassmannians via Combinatorial Constructions** presented at
 - Workshop on Derived Categories, Moduli Spaces and Deformation Theory, *June 24–28, 2019, Cetraro (Italy)*
 - Interaction between Algebraic Geometry and QFT, *June 24–28, 2019, MIPT*

- Derived Categories and Geometry in Positive Characteristic, *June 30–July 6, 2019, Stefan Banach International Mathematical Center in Warsaw (Poland)*
- **Combinatorial constructions for generation of derived categories** at UGA Algebraic Geometry seminar, *October 16, 2019, University of Georgia, GA*

SOME OTHER TALKS

- At seminars in and around MIT:
 - **Existence of moduli spaces for algebraic stacks** at preprint seminar, *November 1, 2019*
 - **Derived categories of Grassmannians and modular representation theory (following paper by Efimov)** at preprint seminar, *May 17, 2019*
 - **Understanding 2×2 matrix multiplication** at graduate student seminar “Pumagrass”, *April 26, 2019*
 - **General introduction to K3 surfaces** at graduate seminar on moduli of sheaves on K3 surfaces, *April 1, 2016*
 - **Exceptional collections in the derived categories of algebraic varieties** at graduate student seminar “Pumagrass”, *November 20, 2015*
- At seminars in HSE, Moscow:
 - **Homotopy Theory of DG Categories** at seminar “Basic Homotopical Algebra”, *June 2015*
 - **Simplicial Presheaves as Stacks** at informal seminar “Derived Algebraic Geometry”, *January 2015*
 - **Grothendieck topologies** at seminar “Homotopies of Schemes”, *October 2014*
 - **Brown Representability Theorem** at informal student seminar, *February 2014*
 - **$S - \Lambda$ Duality** at seminar “Geometric Structures on Manifolds”, *November 2013*

OTHER SCHOOLS AND CONFERENCES

- (1) Workshop “Algebraic Geometry Northeastern Series” (AGNES), *April 21–23, 2017, March 22–24, 2018, March 22–24, September 20–22, 2019*
- (2) Quantum Structures in Algebra and Geometry, *August 26–30, 2019, NEU, Boston*
- (3) Informal summer conference at Lunts’s countryhouse, *July 2015, 2016, 2019*
- (4) Derived Categories and Geometry in Positive Characteristic, *June 30–July 6, 2019, Warsaw*
- (5) Workshop on Derived Categories, Moduli Spaces and Deformation Theory, *June 24–28, 2019, Cetraro, Italy*
- (6) Who is Who in Mirror Symmetry, *May 27–June 1, 2019, HSE, Moscow*
- (7) Categorical and analytic invariants in algebraic geometry VI, *November 26–30, 2018, Kavli IPMU*
- (8) Noncommutative deformations and moduli spaces, *November 19–23, 2018, Kavli IPMU*
- (9) Workshop “Sheaves, Curves and Moduli”, *April 16–20, 2018*
- (10) Advanced School and Workshop on Moduli Spaces, Mirror Symmetry and Enumerative Geometry, *August 1–19, 2016, web-page*
- (11) Conference on Mirror Symmetry and Wall-Crossing, *March 21–25, 2016, web-page*
- (12) Geometry and Physics: Mirror symmetry, Hodge theory, and related topics, *January 25–30, 2016, web-page*
- (13) Workshop “DG-enhancements and higher category methods”, *December 2014, web-page*
- (14) Summer School “Algebra and Geometry”, *July 25–31, 2014, web-page (in Russian), 2015, web-page (in Russian), 2016, web-page (in Russian)*
- (15) Integrability and Isomonodromy in Mathematical Physics, *July 2014, web-page*
- (16) GRIFGA/Lebesgue Summer school – Derived categories, *June 2014, web-page*
- (17) Spring school – Classical and p -adic Hodge theories, *May 2014, web-page*
- (18) School on Theoretical and Mathematical Physics in Dubna, *May 2014, web-page*
- (19) Euler Institute Program – Cohomology in Mathematics and Physics, *September, 2013, web-page*
- (20) Modern Mathematics – International Summer School for Students, *July, 2013, web-page*
- (21) International Summer School in Mathematics for Young Students, *August, 2012, web-page*
- (22) School on Theoretical and Mathematical Physics in Sevastopol, *May 2012, 2013*
- (23) Summer School “Contemporary Mathematics”, *July 2011, 2012, 2013, web-page*

TEACHING EXPERIENCE

- **18.06 Linear Algebra** September–December 2019, Department of Mathematics, MIT
- **18.06 Linear Algebra** February–May 2019, Department of Mathematics, MIT
- **Mentor in DRP** January 2017, 2019, Department of Mathematics, MIT
- **18.03 Differential Equations** September–December 2017, Department of Mathematics, MIT
- **Mentor in PRIMES** (following Stanley’s book “Enumerative combinatorics”) January–December 2017, Department of Mathematics, Massachusetts Institute of Technology
- **Homological Algebra** January–June 2015, Teaching Assistant, Faculty of Mathematics, HSE
- **Commutative Algebra** October 2014–May 2015, Teaching Assistant, Independent University of Moscow, Algebra for second-year students September–December 2014, Teaching Assistant, Faculty of Mathematics, National Research University Higher School of Economics
- **Algebra for first-year students** October 2013–May 2014, Teaching Assistant, Independent University of Moscow
- **Real analysis for first-year students** September–December 2013, Teaching Assistant, Faculty of Mathematics, HSE

MISCELLANEOUS

“Chaos” movie translation from English into Russian, edit proof (part IV), *web-page*