

Mikhail Kornev

Steklov Mathematical Institute of RAS

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RESEARCH AREAS

Homotopy Theory, Higher Geometry, Higher Algebra, Motivic Homotopy Theory, K -theory, Group Theory

APPOINTMENTS

Sep. 2022 – PhD student and research assistant at Steklov Mathematical Institute of RAS
Department of Geometry and Topology

Sep. 2021 – Research assistant at HSE University
Laboratory of Algebraic Topology and Applications

EDUCATION

Sep. 2016 – May 2022 M. S. degree Diploma with honours in Mathematics,
Lomonosov Moscow State University

GRANTS AND AWARDS

Prizes, fellowships and grants

2021 – *The Russian Science Foundation Grant No. 23-11-00143*

2019 *Winner of the olympiad on Partial Differential Equations*
Lomonosov Moscow State University

2018 *Winner of the olympiad on Ordinary Differential Equations*
Lomonosov Moscow State University

PAPERS

Jan. 2024 *n -valued Coset Groups and Dynamics*, arXiv: 2401.12718
To appear in the journal "Mathematical Notes"

Sep. 2023 *Homology Spheres*
Proceedings of Moscow Mathematical Society, 84:2 (2023), 243–296

INVITED CONFERENCE TALKS

April 2023 *Dynamics and multivalued groups*
Conference "SIMC Youth Race", Steklov Mathematical Institute of RAS

April 2022 *Acyclic groups and spaces*
29th International Scientific Conference for Undergraduate and Graduate Students
and Young Scientists "Lomonosov"

INVITED SCIENTIFIC SCHOOL TALKS

- Oct. 2022 *Inconcretness of homotopy categories*
International School "Toric topology, combinatorics and data analysis", Euler
International Mathematical Institute, Saint Petersburg
- Nov. 2021 *Acyclic groups and Kan-Thurston theorem*, International School "Toric Topology and
Combinatoric", Sirius Mathematics Center, Sochi

INVITED SEMINAR TALKS

- April 2023 *Acyclic groups and Kan-Thurston theorem*
Seminar by I. G. Lysenok and A. L. Talambutsa "Seminar on geometric group theory",
Steklov Mathematical Institute of RAS
- Dec. 2022 *Fundamental groups of homology spheres*
Seminar "Geometry, Topology and their applications" at Sobolev Institute of
Mathematics

STUDY SEMINAR TALKS

Texas Tech Quantum Homotopy Seminar

- Mar. 2024 *Euler-Lagrange dynamics via the ∞ -jet bundle* (2 talks)

Seminar On Homotopy Theory And Applications At Independent University Of Moscow

- Dec. 2023 *Principal ∞ -bundles*
- Apr. – May 2023 *A mini-course on the ∞ -category of motivic coarse spaces* (4 talks)
- April 2023 *Elements of unstable motivic homotopy theory*
- Feb. – Apr. 2023 *A mini-course on ∞ -cosmot* (4 talks)
- Dec. 2022 *Applications of Reedy theory*
- Nov. 2022 *Weighted (co-)limits, Gambino's theorem, Reedy model structures*
- Nov. 2022 *Homotopically final functors and examples of calculations with homotopy (co-)limits*
- Nov. 2022 *Nerve—realization adjunction and bar construction*
- April 2022 *A series of 4 talks on sheaves of sets*
- April 2022 *Kan extensions. Additional topics*
- Oct. 2021 *The categorical meaning of the Kan-Thurston theorem*
- Jul. – Aug. 2021 *Quillen's theorem, a closed model structure on $s\text{Set}$*

Study And Scientific Seminar "Geometry And Topology" At Lomonosov Moscow State University

- Sep. 2020 *Andreev's theorem on hyperbolic polyhedra*
- Nov. 2019 *The intersection form of 4-manifolds*
- May 2019 *Nilmanifolds and Massey product in bigraded cohomology rings*

CONFERENCES, WORKSHOPS AND SCHOOLS

- Jul. 2023 *Summer School "Algebra and Geometry"*
HSE University, Steklov Mathematical Institute of RAS, Susdal
- Jul. 2023 *Summer school on non-commutative and derived geometry of matrix factorisations*
Centre of Pure Mathematics, Moscow Institute of Physics and Technology
- Jun. 2023 *Conference on algebra, algebraic geometry, and number theory on the occasion of academician Igor Rostislavovich Shafarevich 100th birthday*
Steklov Mathematical Institute of RAS, Moscow
- Apr. 2023 *Conference "Geometry, topology and mathematical physics" on the occasion of the 85th anniversary of S. P. Novikov and the 80th anniversary of V. M. Buchstaber*
Steklov Mathematical Institute of RAS, Moscow
- Mar. 2023 *Conference "SIMC Youth Race"*
Steklov Mathematical Institute of RAS, Moscow
- Oct. 2022 *International School "Toric topology, combinatorics and data analysis"*
Euler International Mathematical Institute, Saint Petersburg
- Jul. 2022 *Summer School "Algebra and Geometry"*
HSE University, Steklov Mathematical Institute of RAS
- Apr. 2022 *29th International Scientific Conference for Undergraduate and Graduate Students and Young Scientists "Lomonosov"*
Lomonosov Moscow State University
- Nov. 2021 *International School "Toric Topology and Combinatorics"*
HSE University, Sirius Mathematics Center, Sochi
- Nov. 2020 *Topology and Geometry of Group Actions*
HSE University, online
- Nov. 2019 7th Summer School On Geometrical Methods Of Mathematical Physiques
Landau Institute for Theoretical Physics, Lomonosov Moscow State University, Chernogolovka
- Nov. 2019 *Geometry, Topology And Mathematical Physics*
Landau Institute for Theoretical Physics, Lomonosov Moscow State University, Chernogolovka
- Nov. 2018 *Geometry, Topology And Mathematical Physics*
Landau Institute for Theoretical Physics, Lomonosov Moscow State University, Chernogolovka
- Jul. 2018 *Summer school "Modern Mathematics"*
HSE University, Lomonosov Moscow State University, Independent University of Moscow, Dubna
- Jul. 2017 *Summer school "Modern Mathematics"*
HSE University, Lomonosov Moscow State University, Independent University of Moscow, Dubna

TEACHING

- May 2022 – *Teaching various courses (e. g., Algebraic Geometry, Algebraic Topology, Abstract Algebra, Differential Geometry, Linear Algebra, Probability Theory, Discrete Mathematics, Calculus, etc.) on Profi*

Sep. 2016 – 2022

<https://profi.ru/profile/KornevMI3/>

Little Mech-Math courses

An olympiad Math class at Lomonosov Moscow State University

<http://mmmf.msu.ru/about/person.html>

SERVICE

June 2021 –

*Co-organization of the study seminar "Homotopy Theory and Applications" at
Independent University of Moscow*

<https://researchseminars.org/seminar/HomotopyTheoryAndApps>

REFERENCES

Victor Buchstaber, Steklov Mathematical Institute of RAS

buchstab@mi-ras.ru

LANGUAGES

Russian (native)

English (fluent)

French (intermediate)

Latin (basic)