VALENTIN ZAKHAREVICH
Department of Mathematics
Johns Hopkins University
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Employment

2018-2021   J.J. Sylvester Assistant Professor
Johns Hopkins University

Education

2012-2018   Ph.D. Mathematics
University of Texas at Austin, Advisor: Dan Freed
Thesis: K-Theoretic Computation of the Verlinde Ring

2010-2012   M.S. Mathematics
Université Paris-Sud 11/University of Leiden(Algant), Advisor: Robin de Jong
Thesis: Mixed Intermediate Jacobians

2006-2010   B.S. Mathematics
Polytechnic Institute of NYU.

Research Interests

Algebraic Topology, Quantum Field Theory, Supersymmetry,
Twisted Equivariant K-theory, Higher Category Theory

Publications

Localization and Stationary Phase Approximation on Supermanifolds, Journal
of Mathematical Physics, 58(8), 2017

Isoperimetric inequalities for wave fronts and a generalization of Menzin's
conjecture for bicycle monodromy on surfaces of constant curvature, with
Sean Howe and Mathew Pancia, Advances in Geometry, 11:2 , 273-292, 2011

In preparation

K-theoretic computation of the Verlinde Ring.

Teaching Experience

Fall 2020	Math 202, Calculus III, Johns Hopkins
Spring 2020	Math 301, Introduction to Proofs, Johns Hopkins
Fall 2019	Math 109, Calculus II, Johns Hopkins
Spring 2019	Math 405, Real Analysis I, Johns Hopkins
Fall 2018	Math 108, Calculus I, Johns Hopkins
Fall 2017	TA for M427L Advanced Calculus For Applications II, UT Austin
Fall 2016	TA for M427J Differential Equations With Linear Algebra, UT Austin
Spring 2015	TA for M372K Partial Differential Equations, UT Austin
Fall 2013	TA for M408D Calculus II, UT Austin

Talks/Presentations

03/2020	Sketches of Topological Quantum Field Theories, Junior Colloquium, Johns Hopkins University
05/2019	Twisted Equivariant K-Theory of Compact Lie Groups, University of Maryland Geometry-Topology Seminar
11/2017	Twisted Equivariant K-Theory of non-connected Lie Groups, University of Notre Dame Felix Klein Seminar
06/2017	Verlinde ring for non-connected Lie groups and gauging finite group symmetries- Strongly Correlated Topological Phases of Matter Workshop, Simons Center for Geometry and Physics, Stony Brook
03/2017	Von Neumann Entropy- Geometry & String Theory Seminar, UT Austin
02/2017	Verlinde algebras for non-connected Lie groups- KK-theory, Gauge Theory and Topological Phases Conference, Leiden, The Netherlands
11/2016	Gapped Boundary Phases of Topological Insulators- Geometry & String Theory Seminar, UT Austin
02/2016	Fractional Quantum Hall Effect - Geometry & String Theory Seminar, UT Austin
09/2015	Kitaev's toric code - Geometry & String Theory Seminar, UT Austin
03/2015	Monoidal structures on infinity categories – Derived Algebraic Geometry Learning Seminar, UT Austin
07/2014	Finite gauge theories - West Coast Algebraic Topology Summer School, Vancouver, Canada

04/2014	Introduction to supermanifolds – Junior Geometry Seminar, UT Austin
02/2014	The moment map and equivariant cohomology - Junior Geometry Seminar, University of Texas at Austin
08/2009	Isoperimentric inequalities for wave fronts and menzin's conjecture on surfaces of constant curvature - Young Mathematicians Conference

Conferences/Summer Schools/Workshops Attended

01/2019	Between Topology and Quantum Field Theory, UT Austin
08/2018	Higher Algebra and Mathematical Physics, Perimeter Institute
08/2017	Topological and Geometric Methods in QFT Workshop, Bozeman
06/2017	Simons Center's Workshop: Strongly Correlated Topological Phases of Matter, Stony Brook
02/2017	KK-theory, Gauge Theory and Topological Phases Conference, Lorentz Center, Leiden, The Netherlands
07/2015	Prospects in Theoretical Physics Summer School: "New Insights Into Quantum Matter", Princeton/IAS
05/2015	Simons Center's Workshop: Supermoduli, Stony Brook
12/2014	IPAM Symmetry and Topology in Quantum Matter, UCLA
12/2014	Berkeley 6d QFT Workshop, Berkeley
08/2014	QGM PhD retreat, Aarhus, Denmark
07/2014	West Coast Algebraic Topology Summer School, Vancouver, Canada
04/2013	11th Annual Graduate Student Topology & Geometry Conference, Notre Dame University
02/2012	Winter School on Galois Theory, Luxemburg
07/2011	SMI at Università degli Studi di Perugia, Perugia, Italy

Awards

2020	Professor Joel Dean Award for Excellence in the Teaching of Mathematics
2018	Frank Gerth III Dissertation Award
2016	Mathematics Department Regents Fellowship
2014	Frank Gerth III Graduate Excellence Award
2010-2012	Erasmus Mundus Scholarship

2009	Math in Moscow Scholarship from AMS
2008	MASS Merit Fellowship
2006-2010	Honors Scholarship at Polytechnic Institute of NYU

Services

Fall 2019 - present	Organizer, Algebraic Topology Seminar, Johns Hopkins
Fall 2018 - Spring 2019	Co-organizer, Algebraic Topology Seminar, Johns Hopkins
October 2017	Presented at the Saturday Morning Math Group program for high school students. Title "Affine Geometry: All you ever wanted to know (but were afraid to ask!) about triangles"
Fall 2015	Organizer, Conformal Field Theory Learning Seminar, UT Austin UT Austin
Summer 2014	Organizer, Chern Simons Learning Seminar, UT Austin
	Supervised undergraduate students in Directed Reading Program: Spring 2014, Fall 2014, Spring 2015, Fall 2015

Languages

English

Russian(bilingual)

French(conversational)