Curriculum Vitæ

Dmitri Pavlov

dmitri.pavlov@ttu.edu +1–806–224–4485 dmitripavlov.org

1. Research Interests

Quantum field theory, algebraic topology, differential geometry

2. Employment

Texas Tech University: Assistant Professor of Mathematics and Statistics, September 2017–August 2024 (tenured February 29, 2024); Associate Professor of Mathematics and Statistics, September 2024–now.
University of Regensburg: Postdoc, October 2015–August 2017.
Max Planck Institute for Mathematics, Bonn: Visitor, September 2015.
Hausdorff Research Institute for Mathematics, Bonn: Visitor, May 2015–August 2015.
University of Göttingen: Postdoc, July 2014–April 2015.
University of Münster: Postdoc, July 2011–June 2014.

3. Education

University of California, Berkeley: August 2007–May 2011; Ph.D. in Mathematics, May 13, 2011; Dissertation title: A decomposition theorem for noncommutative L_p-spaces and a new symmetric monoidal bicategory of von Neumann algebras.
Saint Petersburg University ITMO: September 2002–June 2007; B.S., June 2006; M.S., June 2007.

4. Fellowships and Awards

Herb Alexander Prize for outstanding dissertation in pure mathematics, 2011.
Simons Fellowship, 2007–2008. (University of California, Berkeley)

5. Ph.D. students

Sole advisor unless indicated otherwise.

Current (with expected graduation year):

2027 Jiajun Hoo
2026 Emilio Verdooren
2024 James Francese

Graduated:

2022 Stephen Peña.
Dissertation title: Geometric factorization algebras.

2021 Nilan Manoj Chathuranga.
Dissertation title: Equivalence of complete distributive inverse semigroups and étale localic groupoids, and a characterization of topological orbifolds.

2021 Rachel Harris (coadvisor; advisor: Răzvan Gelca).
Dissertation title: Algorithms for skein manipulation and automation of skein computations.

6. Postdocs

2019–2022: Daniel Grady. Current position: Assistant Professor at Wichita State University.

7. Publications

16. Nilan Manoj Chathuranga, Dmitri Pavlov. Etale localic groupoids are identical to complete distributive inverse semigroups. *Under review.* https://dmitripavlov.org/semigroup.pdf.

15. Daniel Grady, Dmitri Pavlov. The geometric cobordism hypothesis. *Under review.* https://arxiv.org/abs/2111.01095.

14. Dmitri Pavlov. Combinatorial model categories are equivalent to presentable quasicategories. *Under review.* https://arxiv.org/abs/2110.04679.

13. Daniel Grady, Dmitri Pavlov. Extended field theories are local and have classifying spaces. Geometry & Topology (revision submitted). *Under review.* https://arxiv.org/abs/2011.01208.

12. Dmitri Pavlov. Projective model structures on diffeological spaces and smooth sets and the smooth Oka principle. Homology, Homotopy and Applications (second revision submitted). https://arxiv.org/abs/2210.12845.

11. Dmitri Pavlov. The enriched Thomason model structure on 2-categories. Journal of Pure and Applied Algebra (2023), accepted.

10. Daniel Berwick-Evans, Pedro Boavida de Brito, Dmitri Pavlov. Classifying spaces of infinity-sheaves. Algebraic & Geometric Topology (2023), accepted. https://msp.org/soon/coming.php?jpath=agt

9. Daniel Berwick-Evans, Dmitri Pavlov. Smooth one-dimensional topological field theories are vector bundles with connection. Algebraic & Geometric Topology (2022), accepted. https://msp.org/soon/coming.php?jpath=agt

8. Dmitri Pavlov. Numerable open covers and representability of topological stacks. Topology and its Applications 318:108203 (2022), 1–28. doi:10.1016/j.topol.2022.108203.

7. Dmitri Pavlov. Gelfand-type duality for commutative von Neumann algebras. Journal of Pure and Applied Algebra 226:4 (2021), 106884. doi:10.1016/j.jpaa.2021.106884.

6. Dmitri Pavlov, Jakob Scholbach. Symmetric operads in abstract symmetric spectra. Journal of the Institute of Mathematics of Jussieu 18:4 (2019), 707–758. doi:10.1017/S1474748017000202.

5. Owen Gwilliam, Dmitri Pavlov. Enhancing the filtered derived category. Journal of Pure and Applied Algebra 222:11 (2018), 3621–3674. doi:10.1016/j.jpaa.2018.01.004.

4. Dmitri Pavlov, Jakob Scholbach. Homotopy theory of symmetric powers. Homology, Homotopy, and Applications 20:1 (2018), 359–397. doi:10.4310/HHA.2018.v20.n1.a20.

3. Dmitri Pavlov, Jakob Scholbach. Admissibility and rectification of colored symmetric operads. Journal of Topology 11:3 (2018), 559–601. doi:10.1112/topo.12008.

2. Dmitri Pavlov. Algebraic tensor products and internal homs of noncommutative $\mathcal{L}^p$-spaces. Journal of Mathematical Analysis and Applications 456 (2017), 229–244. doi:10.1016/j.jmaa.2016.11.060.

1. Yury Lifshits, Dmitri Pavlov. Potential theory for mean payoff games. Journal of Mathematical Sciences 145:3 (2007), 4967–4974. doi:10.1007/s10958-007-0331-y.

8. Selected Invited Talks

2023–8–14: Functorial Field Theory Conference. University of Regensburg.
2023–1–6: Seminar on diffeology and related topics.
2022–11–28: Montana State University. The geometric cobordism hypothesis.
2022–10–21: Wichita State University. The geometric cobordism hypothesis.
2022–7–4 — 2022–7–8: The Erwin Schrödinger International Institute for Mathematics and Physics, Vienna. (An invited lecture series.) The geometric cobordism hypothesis.
2022–4–6: University of Nottingham. The geometric cobordism hypothesis.
2022–3–30: University of Lisbon. The geometric cobordism hypothesis.
2022–2–7: MIT Topology Seminar. The geometric cobordism hypothesis.
2018–11–2: University of Louisiana at Lafayette. Homotopy theory of algebras over operads.
2018–8–22: Pohang Operadic Workshop, IBS Center for Geometry and Physics, South Korea. Homotopy theory of algebras over operads.
2017–7–27: Higher Structures Lisbon 2017, University of Lisbon. Extended QFTs are local.
2017–2–7: Texas Tech University (Colloquium Talk, Department of Mathematics and Statistics). Concordances of geometric objects and representability of associated cohomology theories.
2015–11–4: University of Regensburg. Abstract Simons-Sullivan construction for generalized differential cohomology.
2015–6–9: Hausdorff Research Institute for Mathematics, Bonn. Concordance theory for homotopy sheaves.
2014–11–18: Stanford University. Concordance theory for homotopy sheaves.
2014–11–13: Ohio State University. Rectification of homotopy coherent algebraic structures to strict ones.
2014–5–22: University of Regensburg. Concordance theory of homotopy sheaves.
2014–5–6: NCGOA 2014 conference, Vanderbilt University. Tomita-Takesaki theory via modular algebras.
2013–2–13: University of Hamburg. Two-dimensional Yang-Mills theory and equivariant TMF.
2012–10–16 and 2012–11–6: University of Bochum. Two-dimensional Yang-Mills theory and string topology of classifying spaces as local Segal-style functorial field theories.
2012–6–4: FRG Conference on Topology and Field Theories at the University of Notre Dame. Differential cohomology and smooth topological field theories.
2011–5–3: University of Notre Dame. Jones index via a symmetric monoidal bicategory of von Neumann algebras.
2010–12–1: University of Utrecht. Bivariant 0|1-dimensional field theories and de Rham homology and cohomology.
2010–8–6: FRG Workshop on mathematical 2D-field theory and the algebraic topology of closed manifolds at Stony Brook University. 2|1-dimensional Euclidean field theories and noncommutative L^p-spaces.
2009–10–20: University of Münster. Tensor products of noncommutative L_p-spaces and equivalences of categories of L_p-modules.

9. Teaching Experience

Spring 2023	Mathematics 6332: Geometric Mechanics
Fall 2022	Mathematics 6325: Category Theory
Fall 2022	Mathematics 4362: Theory of Numbers
Spring 2022	Mathematics 4351: Advanced Calculus II
Fall 2021	Mathematics 2450: Calculus III
Fall 2021	Mathematics 6330: Manifold Theory
Spring 2020	Mathematics 5399: Introduction to Modern Algebra II
Spring 2020	Mathematics 2360: Linear Algebra
Fall 2020	Mathematics 5317: Introduction to Modern Algebra
Fall 2020	Mathematics 2360: Linear Algebra
Spring 2020	Mathematics 6332: Geometric Mechanics
Spring 2020	Mathematics 6322: Homological Algebra II
Fall 2019	Mathematics 6333: Introduction to Lie Groups and Their Representations
Fall 2019	Mathematics 6321: Homological Algebra I
Spring 2019	Mathematics 5325: Topology II
Fall 2018	Mathematics 5324: Topology I
Fall 2018	Mathematics 5365: Analysis of Algorithms
Spring 2018	Mathematics 6325: Category Theory
Fall 2017	Mathematics 2360: Linear Algebra

10. Seminars Organized

Fall 2019–now: Quantum Homotopy Seminar
Fall 2018–now: Topology and Geometry Seminar

11. Committees

August 2019–August 2021: Graduate Committee (Texas Tech University)

12. Service

Referee reports and quick opinions:

Duke Mathematical Journal
Compositio Mathematica
Advances in Mathematics
Forum of Mathematics, Sigma
Selecta Mathematica
Journal of Topology
Letters in Mathematical Physics
Proceedings of the American Mathematical Society
Algebraic & Geometric Topology
Revista Matemática Iberoamericana
Theory and Applications of Categories
Journal of Homotopy and Related Structures
Operator Theory: Advances and Applications
Journal of Algebra
Journal of Geometry and Physics
SIGMA (Symmetry, Integrability and Geometry: Methods and Applications)
São Paulo Journal of Mathematical Sciences