

David Miyamoto

Current position

2023– **Postdoctoral researcher**, *Max Planck Institute for Mathematics*, Bonn, Germany
Working group: Christian Blohmann

Education

- 2018–2023 **PhD Mathematics**, *University of Toronto*, Toronto, Canada
Supervisor: Yael Karshon
Thesis: [Geometry of leaf spaces of singular foliations](#)
- 2017–2018 **MSc Mathematics**, *University of Toronto*, Toronto, Canada
Supervisor: Dmitry Faifman
Thesis: [Characterizing \$U\(1,1\)\$ and translation-invariant generalized convex valuations on \$\mathbb{C}^2\$](#)
- 2013–2017 **BSc Mathematics (Minor in History)**, *University of Toronto*, Toronto, Canada

Publications and Preprints

Published

- 2024 [Riemannian foliations and quasifolds](#)
Yi Lin and David Miyamoto
Math. Z. 308 (2024), no. 49, 32 pages
- [Diffeological submanifolds and their friends](#)
Yael Karshon, David Miyamoto, and Jordan Watts
Differential Geom. Appl. 96 (2024), 14 pages
 - [Singular foliations through diffeology](#)
David Miyamoto
Recent advances in diffeologies and their applications, 139–160, Contemporary Mathematics vol. 794, published by the American Mathematical Society (2024). MR4712602
- 2023 [Quasifold groupoids and diffeological quasifolds](#)
Yael Karshon and David Miyamoto
Transform. Groups (2023), 35 pages
- [The basic de Rham complex of a singular foliation](#)
David Miyamoto
Int. Math. Res. Not. IMRN (2023), no. 8, 6364–6401. MR4574377

Submitted

- 2023 [Lie groupoids determined by their orbit spaces](#)
David Miyamoto
Preprint, 31 pages. arXiv:2310.11968

Research Presentations

Conference talks

- 2024 July “Lie groupoids determined by their orbit spaces”
Workshop on Hamiltonian Geometry and Quantization
Fields Institute, Toronto, Canada
- 2024 Mar. “Lie groupoids determined by their orbit spaces”
Higher Geometric Structures Along the Lower Rhine XVII
Max Planck Institute for Mathematics, Bonn, Germany
- 2024 Mar. “Lie groupoids determined by their orbit spaces”
Building-up Differential Homotopy Theory
Osaka Metropolitan University, Osaka, Japan
- 2023 Nov. “Leaf spaces of Killing foliations”
Atelier on Higher Structures in Differential Geometry (poster)
Institut Camille Jordan, Lyon, France
- 2023 Jan. “The basic complex of a singular foliation”
Workshop on Lie Groups, Singular Spaces, and Higher Structures
Fields Institute, Toronto, Canada
- 2022 July “Quasifolds as groupoids and as diffeological spaces”
Poisson 2022 (poster)
Instituto de Ciencias Mathematicas, Madrid, Spain
- 2022 July “Quasifold groupoids and diffeological quasifolds”
AMS-EMS-SMF Joint International Meeting, Diffeology session
Université Grenoble Alpes, Grenoble, France
- 2022 Apr. “Basic forms on foliated manifolds”
Gone Fishing 2022
Georgia Southern University, Savannah, United States
- 2019 Dec. “Basic forms on foliated manifolds”
CMS Winter Meeting (poster)
Toronto, Canada

Seminar talks

In reverse chronological order

- 2024 ○ Higher Differential Geometry Seminar
Max Planck Institute for Mathematics, Bonn Germany
- Oberseminar Deformationsquantisierung und Geometrie
Universität Würzburg
- Special Seminar
Université de Lorraine

- 2023
 - Global Diffeology Seminar
Online
 - Symplectic Geometry Seminar
University of Toronto, Toronto, Canada
 - MPI–Oberseminar
Max Planck Institute for Mathematics, Bonn, Germany
 - MPIM Topology Seminar
Max Planck Institute for Mathematics, Bonn, Germany
 - Higher Differential Geometry Seminar
Max Planck Institute for Mathematics, Bonn Germany
 - Symplectic and Poisson Geometry Seminar
University of Illinois Urbana-Champaign, Urbana-Champaign, United States

- 2022
 - Graduate Student Seminar
University of Toronto, Toronto, Canada
 - Symplectic Geometry Seminar
University of Toronto, Toronto, Canada
 - Geometry and Dynamics Seminar
Tel Aviv University, Tel Aviv, Israel
 - Symplectic and Poisson Geometry Seminar
University of Illinois Urbana-Champaign, Urbana-Champaign, United States
 - Local Poisson Mini-Conference
University of Toronto, Toronto, Canada

- 2021
 - Global Diffeology Seminar
Online
 - Graduate Student Seminar
University of Toronto, Toronto, Canada

- 2020
 - Graduate Student Seminar
University of Toronto, Toronto, Canada

Awards and Grants

- 2023 Queen Elizabeth II/Lloyd George Elliott Graduate Scholarship in Science and Technology
For academic excellence
- 2022 Ida Bulat Memorial Graduate Fellowship
For academic excellence
- 2021 Daniel B. DeLury Teaching Assistant Award
For excellence in teaching
- 2019 Coxeter Graduate Scholarship
For academic excellence
- 2019 AARMS Award
First prize for a poster presented at the 2019 Canadian Mathematical Society winter meeting
- 2017 NSERC USRA
Undergraduate research on a Radon transform in Minkowski space, supervised by Dmitry Faifman

- 2013–2016 In-course scholarships
 For academic excellence
- Isabel Bader In Course Scholarship
 - William Ewart Staples Scholarship
 - William Crichton Webster Scholarship
 - University of Toronto Scholar

Teaching

- 2021–2022 **Instructor**, *University of Toronto*, Toronto
 Multivariable Calculus
- 2015–2023 **Teaching Assistant**, *University of Toronto*, Toronto
 In reverse chronological order
- Hamiltonian Mechanics (graduate)
 - Classical Geometries
 - Introduction Differential Topology
 - Control Theory (graduate)
 - Analysis I
 - Multivariable Calculus
 - Introduction to Proofs
 - Introduction to Topology
 - Introduction to Ordinary Differential Equations
 - Calculus II
 - Multivariable Calculus with Proofs
 - Differential Topology (graduate)
 - Calculus!
 - Linear Algebra II

Service

Journal Referee

Transactions of the American Mathematical Society
 Israel Journal of Mathematics
 Advances in Geometry
 Pure and Applied Mathematics Quarterly

Community

- 2024 Organizer of the workshop “[Exploring new arrows in the BGW groupoid](#),” a retreat for early career researchers
 October 25–28, 2024 in Bielefeld, Germany
- 2022–2023 Organizer of the Symplectic Seminar at the University of Toronto
 Weekly
- 2022–2023 Organizer of the Graduate Student Seminar at the University of Toronto
 Weekly
- 2021–2022 Mathematics representative to Graduate Student Union at the University of Toronto
- 2021–2022 Facilitator of a graduate student social form