

Maxence Mayrand

Curriculum Vitae | June 2022

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Employment

Université de Sherbrooke Assistant Professor Département de mathématiques	2022–present
University of Toronto Postdoctoral Fellow Department of Mathematics Geometric Structures Laboratory Mentor: Prof. Marco Gualtieri	2019–2022
University of Oxford Lecturer in Pure Mathematics Teaching position at Jesus College (part time)	2018–2019

Education

University of Oxford DPhil in Mathematics Supervisor: Prof. Andrew Dancer	2015–2019
McGill University BSc Honours Mathematics Mentor: Prof. Niky Kamran	2012–2015

Research keywords

Complex geometry; hyperkähler geometry; geometric quantization; holomorphic Poisson geometry; Lie groupoids; Lie algebras; integrable systems; moment maps; symplectic reduction; geometric invariant theory; singular spaces; moduli spaces; gauge theory; Yang–Mills equations.

Papers

- [1] Crooks, P., Mayrand, M., *Symplectic reduction along a submanifold*.
Compositio Mathematica (to appear)
[arXiv:2107.03198](#)
- [2] Mayrand, M., *Hyperkähler metrics near Lagrangian submanifolds and symplectic groupoids*.
J. Reine Angew. Math. (Crelle’s Journal), **782** (2022), 197–218.
[arXiv:2011.09282](#)

- [3] Mayrand, M., *Kempf–Ness type theorems and Nahm equations*.
[Journal of Geometry and Physics](#), **136** (2019), 138–155.
[arXiv:1809.04518](#)
- [4] Mayrand, M., *Stratification of singular hyperkähler quotients*.
 Submitted.
[arXiv:1807.05992](#)
- [5] Mayrand, M., *Stratified hyperkähler spaces from semisimple Lie algebras*.
[Transformation Groups](#) (2018).
[arXiv:1709.09126](#)
- [6] Mayrand, M., *Particle motion in monopoles and geodesics on cones*.
[Symmetry, Integrability and Geometry: Methods and Applications \(SIGMA\)](#), **10**
 (2014), 102, 17 pages.
[arXiv:1407.7919](#)

PhD thesis (University of Oxford, 2019)

Title: *Stratified hyperkähler spaces and Nahm’s equations*

Supervisor: Prof. Andrew Dancer

[pdf available here](#)

Teaching

University of Toronto

- Complex Variables (MAT334) Winter 2022
- Introduction to Combinatorics (MAT344) Fall 2021
- Introduction to Combinatorics (MAT344) Fall 2020
- Concepts in Abstract Mathematics (MAT246) Winter 2020

Jesus College, University of Oxford

- Group Theory Spring 2019
- Groups and Group Actions Winter and Spring 2019
- Linear Algebra II Winter 2019
- Topology Winter 2019
- Linear Algebra I Fall 2018
- Introduction to University Mathematics Fall 2018
- Introduction to Complex Numbers Fall 2018

Mathematical Institute, University of Oxford

Tutor:

- Lie Algebras Spring 2017
- Lie Algebras Fall 2017

Teaching assistant:

- Commutative Algebra Winter 2018
- Representation Theory of Semisimple Lie Algebras Winter 2017
- Lie Algebras Fall 2016

Mini-courses

- *Symplectic Reduction and Geometric Invariant Theory* (3 hours) Dec 2020
2020 Canadian Mathematical Society Winter Meeting
- *Nahm's Equations* (6 hours) Oct 2019
The Fields Institute
- *Stratified Hyperkähler Spaces and Nahm's Equations* (6 hours) Jul 2018
The Fields Institute

Talks

1. *Dirac reduction and shifted symplectic geometry* 8 Feb 2022
SwissMAP Research Station, Les Diablerets
Differentiable Stacks, Poisson Geometry and related geometric structures
2. *Dirac reduction along a submanifold* 10 Jan 2022
CIRM, Luminy
Lie Theory and Poisson Geometry
3. *Symplectic reduction along a submanifold and the Moore-Tachikawa TQFT* 1 May 2021
AMS Spring Western Sectional Meeting
Geometric and Categorical Methods in Representation Theory
American Mathematical Society
4. *Hyperkähler metrics near Lagrangian submanifolds and symplectic groupoids* 22 Jan 2021
Geometry and Topology Seminar
University of Waterloo
5. *Hyperkähler metrics near Lagrangian submanifolds and symplectic groupoids* 11 Jan 2021
Differential Geometry Research Seminar
University of Hamburg
6. *Hyperkähler realizations of holomorphic Poisson surfaces* 11 Dec 2020
Friday Fish Seminar
Utrecht University
7. *Symplectic reduction along a submanifold and the Moore-Tachikawa TQFT* 3 Sep 2020
Northeastern University
Geometry, Physics, and Representation Theory Seminar
8. *Hyperkähler structures on holomorphic symplectic groupoids* 7 Jun 2020
Workshop on Lie theory and integrable systems in symplectic and Poisson geometry
9. *Hyperkähler structures on symplectic realizations of holomorphic Poisson surfaces* 28 May 2020
School on Geometry and Dynamics of Foliations
CIRM
10. *Kempf-Ness type theorems and Nahm's equations* 7 Dec 2019
2019 Canadian Mathematical Society Winter Meeting

- Algebraic Geometry and Representation Theory
Toronto, Canada
11. *Stratified hyperkähler spaces, GIT, and Nahm's equations* 5 Dec 2019
Boston College
Geometry and Topology Seminar
 12. *Symplectic reduction, GIT quotients, and Nahm's equations* 21 Nov 2019
McMaster University
Geometry and Topology Seminar
 13. *Singular hyperkähler reduction and geometric invariant theory* 11 Nov 2019
University of Toronto
Symplectic Geometry Seminar
 14. *Symplectic reduction, GIT quotients, and Nahm's equations* 11 Oct 2019
CIRGET (Centre interuniversitaire de recherches en géométrie et topologie)
Geometry and Topology Seminar
 15. *Singular hyperkähler quotients* 16 May 2019
University of Duisburg-Essen, Germany
The Essen Seminar for Algebraic Geometry and Arithmetic
 16. *Stratified hyperkähler spaces* 6 Feb 2019
Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark
QGM seminars
 17. *Hyperkähler quotients and geometric invariant theory* 5 Feb 2019
Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark
Introductory seminars
 18. *Stratified hyperkähler spaces* 15 Jun 2018
University of Edinburgh
GLEN Algebraic Geometry Seminar
 19. *Stratified hyperkähler spaces* 5 Mar 2018
University of Oxford
Geometry and Analysis Seminar
 20. *Nahm equations, stratified hyperkähler spaces and the Moore–Tachikawa category.* 30 Mar 2017
ICTS, Tata Institute of Fundamental Research, Bangalore, India
ICTS Special Seminar
 21. *Nahm equations and stratified hyperkähler spaces* 28 Mar 2017
Indian Institute of Science, Bangalore, India
School and Workshop on Geometry and Physics of Moduli Spaces

Scholarships and awards

University of Toronto

- F. V. Atkinson Teaching Award June 2021
- NSERC Postdoctoral Fellowship 2019–2021
- FRQNT Postdoctoral Research Scholarship 2019–2021

Pacific Institute for the Mathematical Sciences

- PIMS Postdoctoral Fellowship (declined) 2019–2021

University of Oxford

- Moussouris Scholarship 2015–2019
Full scholarship (tuition fees and living expenses)
Awarded by the University of Oxford
- NSERC CGS D (declined) 2017–2019
Alexander Graham Bell Canada Graduate Scholarships
- NSERC PGS D 2017–2019
Postgraduate Scholarships–Doctoral Program
- FRQNT Doctoral Scholarship (declined) 2017–2019
- FRQNT Master Scholarship 2015–2017

McGill University

- Dean's Honour List May 2015
- First Class Honours in Mathematics May 2015
- Gowrisankaran Prize in Mathematics and Statistics May 2015
- NSERC Undergraduate Student Research Award Summer 2014
- Kamran Undergraduate Award Summer 2013