

Maxence Mayrand

Curriculum Vitae | December 2023

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Employment

Université de Sherbrooke | Assistant Professor 2022–present
Département de mathématiques

University of Toronto | Postdoctoral Fellow 2019–2022
Department of Mathematics, Geometric Structures Laboratory
Supervisor: Prof. Marco Gualtieri

Education

University of Oxford | DPhil in Mathematics 2015–2019
Supervisor: Prof. Andrew Dancer

McGill University | BSc Honours Mathematics 2012–2015
Supervisor: Prof. Niky Kamran

Papers

- [1] Mayrand, M., *Shifted coisotropic structures for differentiable stacks*.
- [2] Bălibanu, A., Mayrand, M., *Reduction along strong Dirac maps*.
[arXiv:2210.07200](#)
- [3] Crooks, P., Mayrand, M., *Symplectic reduction along a submanifold*.
Compositio Mathematica, **158** (2022), 1878–1934.
[arXiv:2107.03198](#)
- [4] Mayrand, M., *Hyperkähler metrics near Lagrangian submanifolds and symplectic groupoids*.
J. Reine Angew. Math. (Crelle’s Journal), **782** (2022), 197–218.
[arXiv:2011.09282](#)
- [5] Mayrand, M., *Kempf–Ness type theorems and Nahm equations*.
Journal of Geometry and Physics, **136** (2019), 138–155.
[arXiv:1809.04518](#)
- [6] Mayrand, M., *Stratification of singular hyperkähler quotients*.
Complex Manifolds, **9** (2022), 261–284.
[arXiv:1807.05992](#)
- [7] Mayrand, M., *Stratified hyperkähler spaces from semisimple Lie algebras*.
Transformation Groups, **25** (2020), 191–215.
[arXiv:1709.09126](#)

- [8] 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)

Stratified hyperkähler spaces and Nahm's equations

pdf available [here](#)

Research teams

- [CRM](#) | Centre de recherches mathématiques
- [CIRGET](#) | Centre interuniversitaire de recherches en géométrie et topologie
- [SAG](#) | Équipe de recherche en structures algébriques et géométriques à Sherbrooke

Research grants

- NSERC Discovery Grant (\$30,000 a year for 5 years) 2023–2028
- NSERC Discovery Launch Supplement (\$12,500 for one year) 2023–2024

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

Teaching

Université de Sherbrooke

- Analyse I (MAT129) Winter 2024
- Analyse réelle (MAT189) Winter 2024
- Géométrie différentielle (MAT603) Fall 2023
- Analyse réelle (MAT189) Winter 2023
- Équations différentielles (MAT528) Winter 2023

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

Talks

1. *Hyperkähler metrics via deformation theory* 10 Mar 2023
CIRGET, Séminaire de géométrie et topologie
2. *Reduction of Dirac realizations* 4 Jan 2023
2023 Joint Mathematics Meetings, Boston
AMS Special Session on Integrable Systems and Symplectic Group Actions
3. *Reduction along a submanifold* 4 Jan 2023
2023 Joint Mathematics Meetings, Boston

- AMS Special Session on Resolutions of Singularities and
Cohomology in Geometry and Representation Theory
4. *Twistor constructions of hyperkähler and hypercomplex structures near complex submanifolds* 3 Dec 2022
2022 CMS Winter Meeting, Toronto
Complex Geometry and Moduli Space
 5. *Reduction of Dirac realizations* 17 Nov 2022
Global Poisson Webinar
 6. *Dirac reduction and shifted symplectic geometry* 8 Feb 2022
SwissMAP Research Station, Les Diablerets
Differentiable Stacks, Poisson Geometry and related geometric structures
 7. *Dirac reduction along a submanifold* 10 Jan 2022
CIRM, Luminy
Lie Theory and Poisson Geometry
 8. *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
 9. *Hyperkähler metrics near Lagrangian submanifolds and symplectic groupoids* 22 Jan 2021
Geometry and Topology Seminar
University of Waterloo
 10. *Hyperkähler metrics near Lagrangian submanifolds and symplectic groupoids* 11 Jan 2021
Differential Geometry Research Seminar
University of Hamburg
 11. *Hyperkähler realizations of holomorphic Poisson surfaces* 11 Dec 2020
Friday Fish Seminar
Utrecht University
 12. *Mini-course on Symplectic Reduction and Geometric Invariant Theory* 3 Dec 2020
2020 Canadian Mathematical Society Winter Meeting
 13. *Symplectic reduction along a submanifold and the Moore-Tachikawa TQFT* 3 Sep 2020
Northeastern University
Geometry, Physics, and Representation Theory Seminar
 14. *Hyperkähler structures on holomorphic symplectic groupoids* 7 Jun 2020
Workshop on Lie theory and integrable systems in symplectic and Poisson geometry
 15. *Hyperkähler structures on symplectic realizations of holomorphic Poisson surfaces* 28 May 2020
School on Geometry and Dynamics of Foliations
CIRM
 16. *Kempf-Ness type theorems and Nahm's equations* 7 Dec 2019
2019 Canadian Mathematical Society Winter Meeting
Algebraic Geometry and Representation Theory
Toronto, Canada

17. *Stratified hyperkähler spaces, GIT, and Nahm's equations* 5 Dec 2019
Boston College
Geometry and Topology Seminar
18. *Symplectic reduction, GIT quotients, and Nahm's equations* 21 Nov 2019
McMaster University
Geometry and Topology Seminar
19. *Singular hyperkähler reduction and geometric invariant theory* 11 Nov 2019
University of Toronto
Symplectic Geometry Seminar
20. *Two lectures on Nahm's equations* 30–31 Oct 2019
The Fields Institute
Geometric Structures Laboratory Seminar
21. *Symplectic reduction, GIT quotients, and Nahm's equations* 11 Oct 2019
CIRGET (Centre interuniversitaire de recherches en géométrie et topologie)
Geometry and Topology Seminar
22. *Singular hyperkähler quotients* 16 May 2019
University of Duisburg-Essen, Germany
The Essen Seminar for Algebraic Geometry and Arithmetic
23. *Stratified hyperkähler spaces* 6 Feb 2019
Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark
QGM seminars
24. *Hyperkähler quotients and geometric invariant theory* 5 Feb 2019
Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark
Introductory seminars
25. *Nahm's equations, groupoids, and Higgs bundles* 25 Jul 2018
(Part II of a mini-course on my thesis work)
The Fields Institute
Geometric Structures Laboratory Seminar
26. *Stratified hyperkähler spaces and Nahm's equations* 24 Jul 2018
(Part I of a mini-course on my thesis work)
The Fields Institute
Geometric Structures Laboratory Seminar
27. *Stratified hyperkähler spaces* 15 Jun 2018
University of Edinburgh
GLEN Algebraic Geometry Seminar
28. *Stratified hyperkähler spaces* 5 Mar 2018
University of Oxford
Geometry and Analysis Seminar
29. *Nahm equations, stratified hyperkähler spaces and the Moore–Tachikawa category.* 30 Mar 2017
ICTS, Tata Institute of Fundamental Research, Bangalore, India
ICTS Special Seminar
30. *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