

Maxence Mayrand

Curriculum Vitae | August 2024

email maxence.mayrand@usherbrooke.ca
webpage <https://maxencemayrand.github.io>

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] Crooks, P., Mayrand, M., *Scheme-theoretic coisotropic reduction*.
[arXiv:2408.11932](#)
- [2] Mayrand, M., *Shifted coisotropic structures for differentiable stacks*.
[arXiv:2312.09214](#)
- [3] Bălibanu, A., Mayrand, M., *Reduction along strong Dirac maps*.
[arXiv:2210.07200](#)
- [4] Crooks, P., Mayrand, M., *Symplectic reduction along a submanifold*.
Compositio Mathematica, **158** (2022), 1878–1934.
[arXiv:2107.03198](#)
- [5] Mayrand, M., *Hyperkähler metrics near Lagrangian submanifolds and symplectic groupoids*.
J. Reine Angew. Math. (Crelle’s Journal), **782** (2022), 197–218.
[arXiv:2011.09282](#)
- [6] Mayrand, M., *Kempf–Ness type theorems and Nahm equations*.
Journal of Geometry and Physics, **136** (2019), 138–155.
[arXiv:1809.04518](#)
- [7] Mayrand, M., *Stratification of singular hyperkähler quotients*.
Complex Manifolds, **9** (2022), 261–284.
[arXiv:1807.05992](#)

- [8] Mayrand, M., *Stratified hyperkähler spaces from semisimple Lie algebras*. *Transformation Groups*, **25** (2020), 191–215.
[arXiv:1709.09126](#)
- [9] 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

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| • FRQNT Team Research Project (\$150,000) | 2024–2027 |
| With Vestislav Apostolov, Julien Keller, and Frédéric Rochon | |
| • NSERC Discovery Grant (\$150,000) | 2023–2028 |
| • NSERC Discovery Launch Supplement (\$12,500) | 2023–2024 |

Scholarships and awards

University of Toronto

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

Pacific Institute for the Mathematical Sciences

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| • PIMS Postdoctoral Fellowship (declined) | 2019–2021 |
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University of Oxford

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| • 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. *The Moore-Tachikawa conjecture via shifted symplectic geometry* 15 Jul 2024
Workshop on Hamiltonian Geometry and Quantization, The Fields Institute

2. *Shifted coisotropic structures and Moore–Tachikawa TQFTs* 13 Mar 2024
CIRGET, Algebraic Geometry Seminar
3. *Shifted coisotropic structures for differentiable stacks* 4 Mar 2024
The Fields Institute, Geometric Structures Laboratory Seminar
4. *Shifted coisotropic structures for differentiable stacks* 28 Feb 2024
University of Göttingen, Higher Structures Seminar
5. *Hyperkähler metrics via deformation theory* 10 Mar 2023
CIRGET, Séminaire de géométrie et topologie
6. *Reduction of Dirac realizations* 4 Jan 2023
2023 Joint Mathematics Meetings, Boston
AMS Special Session on Integrable Systems and Symplectic Group Actions
7. *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
8. *Twistor constructions of hyperkähler and hypercomplex structures
near complex submanifolds* 3 Dec 2022
2022 CMS Winter Meeting, Toronto
Complex Geometry and Moduli Space
9. *Reduction of Dirac realizations* 17 Nov 2022
Global Poisson Webinar
10. *Dirac reduction and shifted symplectic geometry* 8 Feb 2022
SwissMAP Research Station, Les Diablerets
Differentiable Stacks, Poisson Geometry and related geometric structures
11. *Dirac reduction along a submanifold* 10 Jan 2022
CIRM, Luminy
Lie Theory and Poisson Geometry
12. *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
13. *Hyperkähler metrics near Lagrangian submanifolds and
symplectic groupoids* 22 Jan 2021
Geometry and Topology Seminar
University of Waterloo
14. *Hyperkähler metrics near Lagrangian submanifolds and
symplectic groupoids* 11 Jan 2021
Differential Geometry Research Seminar
University of Hamburg
15. *Hyperkähler realizations of holomorphic Poisson surfaces* 11 Dec 2020
Friday Fish Seminar
Utrecht University
16. *Mini-course on Symplectic Reduction and Geometric Invariant Theory* 3 Dec 2020
2020 Canadian Mathematical Society Winter Meeting

17. *Symplectic reduction along a submanifold and the Moore–Tachikawa TQFT* 3 Sep 2020
Northeastern University
Geometry, Physics, and Representation Theory Seminar
18. *Hyperkähler structures on holomorphic symplectic groupoids* 7 Jun 2020
Workshop on Lie theory and integrable systems in symplectic and
Poisson geometry
19. *Hyperkähler structures on symplectic realizations of holomorphic Poisson surfaces* 28 May 2020
School on Geometry and Dynamics of Foliations
CIRM
20. *Kempf–Ness type theorems and Nahm’s equations* 7 Dec 2019
2019 Canadian Mathematical Society Winter Meeting
Algebraic Geometry and Representation Theory
Toronto, Canada
21. *Stratified hyperkähler spaces, GIT, and Nahm’s equations* 5 Dec 2019
Boston College
Geometry and Topology Seminar
22. *Symplectic reduction, GIT quotients, and Nahm’s equations* 21 Nov 2019
McMaster University
Geometry and Topology Seminar
23. *Singular hyperkähler reduction and geometric invariant theory* 11 Nov 2019
University of Toronto
Symplectic Geometry Seminar
24. *Two lectures on Nahm’s equations* 30–31 Oct 2019
The Fields Institute
Geometric Structures Laboratory Seminar
25. *Symplectic reduction, GIT quotients, and Nahm’s equations* 11 Oct 2019
CIRGET (Centre interuniversitaire de recherches en géométrie et topologie)
Geometry and Topology Seminar
26. *Singular hyperkähler quotients* 16 May 2019
University of Duisburg-Essen, Germany
The Essen Seminar for Algebraic Geometry and Arithmetic
27. *Stratified hyperkähler spaces* 6 Feb 2019
Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark
QGM seminars
28. *Hyperkähler quotients and geometric invariant theory* 5 Feb 2019
Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark
Introductory seminars
29. *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
30. *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
31. *Stratified hyperkähler spaces* 15 Jun 2018
University of Edinburgh
GLEN Algebraic Geometry Seminar
32. *Stratified hyperkähler spaces* 5 Mar 2018
University of Oxford
Geometry and Analysis Seminar
33. *Nahm equations, stratified hyperkähler spaces and the Moore–Tachikawa category.* 30 Mar 2017
ICTS, Tata Institute of Fundamental Research, Bangalore, India
ICTS Special Seminar
34. *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