# Maxence Mayrand
## Curriculum Vitae | June 2022

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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
   Mentor: Prof. Marco Gualtieri

**University of Oxford | Lecturer in Pure Mathematics**       2018–2019
   Teaching position at Jesus College (part time)

## Education

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

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

## 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.

## Research papers

[1] Crooks, P., Mayrand, M., *Symplectic reduction along a submanifold.*
    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.*
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

*Stratifed hyperkähler spaces and Nahm's equations*
University of Oxford (2019)
Supervisor: Prof. Andrew Dancer
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*  22 Jan 2021
   *symplectic groupoids*
     Geometry and Topology Seminar
     University of Waterloo
5. *Hyperkähler metrics near Lagrangian submanifolds and*  11 Jan 2021
   *symplectic groupoids*
     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*  28 May 2020
   *holomorphic Poisson surfaces*
     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*  30 Mar 2017
    *category.*
    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