

## Maxence Mayrand

Curriculum Vitae | December 2020

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## Employment

University of Toronto | Postdoctoral Fellow 2019–present

Geometric Structures Laboratory, Department of Mathematics

Supervisor: Prof. Marco Gualtieri

Jesus College, University of Oxford | Lecturer in Pure Mathematics 2018–2019

Part-time teaching position.

## 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 interests

Complex geometry; hyperkähler geometry; geometric quantization; deformation theory; holomorphic Poisson geometry; Lie groupoids; Lie algebras; integrable systems; moment maps; symplectic reduction; geometric invariant theory; moduli spaces; gauge theory.

# Papers

- [1] Mayrand, M., *Hyperkähler metrics near Lagrangian submanifolds and symplectic groupoids*. [arXiv:2011.09282](#) (2020)
- [2] Mayrand, M., *Stratified hyperkähler spaces and Nahm's equations (PhD thesis)*. [Oxford University Research Archive](#) (2019)
- [3] Mayrand, M., *Kempf–Ness type theorems and Nahm equations*. [Journal of Geometry and Physics](#), **136** (2019), 138–155.
- [4] Mayrand, M., *Stratification of singular hyperkähler quotients*. [arXiv:1807.05992](#) (2018)
- [5] Mayrand, M., *Stratified hyperkähler spaces from semisimple Lie algebras*. [Transformation Groups](#) (2018).
- [6] Mayrand, M., *Particle motion in monopoles and geodesics on cones*. [Symmetry, Integrability and Geometry: Methods and Applications \(SIGMA\)](#), **10** (2014), 102, 17 pages.

## Teaching

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### University of Toronto

- Introduction to Combinatorics Fall 2020
- Concepts in Abstract Mathematics Winter 2020

### Jesus College, University of Oxford

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

### Mathematical Institute, University of Oxford

- Commutative Algebra (TA) Winter 2018
- Lie Algebras (tutor) Fall 2017
- Lie Algebras (tutor) Spring 2017
- Representation Theory of Semisimple Lie Algebras (TA) Winter 2017
- Lie Algebras (TA) Fall 2016

## Talks

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1. *Hyperkähler realizations of holomorphic Poisson surfaces* 11 Dec 2020  
Friday Fish Seminar  
Utrecht University
2. *Mini-course on Symplectic Reduction and Geometric Invariant Theory* 3 Dec 2020  
2020 Canadian Mathematical Society Winter Meeting
3. *Symplectic reduction along a submanifold and the Moore–Tachikawa TQFT* 3 Sep 2020  
Northeastern University  
Geometry, Physics, and Representation Theory Seminar
4. *Hyperkähler structures on holomorphic symplectic groupoids* 7 Jun 2020  
Workshop on Lie theory and integrable systems in symplectic and  
Poisson geometry
5. *Hyperkähler structures on symplectic realizations of holomorphic Poisson surfaces* 28 May 2020  
School on Geometry and Dynamics of Foliations  
CIRM
6. *Kempf–Ness type theorems and Nahm’s equations* 7 Dec 2019  
2019 Canadian Mathematical Society Winter Meeting  
Algebraic Geometry and Representation Theory  
Toronto, Canada
7. *Stratified hyperkähler spaces, GIT, and Nahm’s equations* 5 Dec 2019  
Boston College

- Geometry and Topology Seminar
8. *Symplectic reduction, GIT quotients, and Nahm's equations* 21 Nov 2019  
 McMaster University  
 Geometry and Topology Seminar
  9. *Singular hyperkähler reduction and geometric invariant theory* 11 Nov 2019  
 University of Toronto  
 Symplectic Geometry Seminar
  10. *Two lectures on Nahm's equations* 30–31 Oct 2019  
 The Fields Institute  
 Geometric Structures Laboratory Seminar
  11. *Symplectic reduction, GIT quotients, and Nahm's equations* 11 Oct 2019  
 CIRGET (Centre interuniversitaire de recherches en géométrie et topologie)  
 Geometry and Topology Seminar
  12. *Singular hyperkähler quotients* 16 May 2019  
 University of Duisburg-Essen, Germany  
 The Essen Seminar for Algebraic Geometry and Arithmetic
  13. *Stratified hyperkähler spaces* 6 Feb 2019  
 Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark  
 QGM seminars
  14. *Hyperkähler quotients and geometric invariant theory* 5 Feb 2019  
 Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark  
 Introductory seminars
  15. *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
  16. *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
  17. *Stratified hyperkähler spaces* 15 Jun 2018  
 University of Edinburgh  
 GLEN Algebraic Geometry Seminar
  18. *Stratified hyperkähler spaces* 5 Mar 2018  
 University of Oxford  
 Geometry and Analysis Seminar
  19. *Nahm equations, stratified hyperkähler spaces and the Moore–Tachikawa category.* 30 Mar 2017  
 ICTS, Tata Institute of Fundamental Research, Bangalore, India  
 ICTS Special Seminar
  20. *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

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### University of Toronto

- NSERC Postdoctoral Fellowship (2 years) 2019–2021
- FRQNT Postdoctoral research scholarship (2 years) 2019–2021

### Pacific Institute for the Mathematical Sciences

- PIMS Postdoctoral Fellowship (2 years) (declined) 2019–2021

### University of Oxford

- Moussouris Scholarship, University of Oxford (3.5 years) 2015–2019  
Full scholarship (tuition fees, college fees, and living expenses)
- NSERC CGS D (2 years) (declined) 2017–2019  
Alexander Graham Bell Canada Graduate Scholarships–Doctoral Program
- NSERC PGS D (2 years) 2017–2019  
Postgraduate Scholarships–Doctoral Program
- FRQNT doctoral scholarship (2 years) (declined) 2017–2019
- FRQNT master scholarship (2 years) 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