

# Maxence Mayrand

## Curriculum Vitae | September 2020

### Contact

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**Affiliation**   University of Toronto, Department of Mathematics

### Employment

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<b>Postdoctoral Fellow   University of Toronto</b> Department of Mathematics Geometric Structures Laboratory Supervisor: Prof. Marco Gualtieri	2019–present (3 years)
<b>Lecturer in Pure Mathematics   University of Oxford</b> Teaching at Jesus College	2018–2019

### Education

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

### Research keywords

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Complex geometry; hyperkähler geometry; holomorphic Poisson structures; Lie groupoids; Lie algebras; moment maps; symplectic reduction; geometric invariant theory; stratified spaces; gauge theory; moduli spaces; Nahm’s equations.

### Publications and preprints

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- [1] Mayrand, M., *Kempf–Ness type theorems and Nahm equations*.  
[Journal of Geometry and Physics](#), **136** (2019), 138–155.  
[arXiv:1809.04518](#)
- [2] Mayrand, M., *Local structure of singular hyperkähler quotients*.  
Submitted.  
[arXiv:1807.05992](#)

- [3] Mayrand, M., *Stratified hyperkähler spaces from semisimple Lie algebras*.  
[Transformation Groups \(2018\)](#).  
[arXiv:1709.09126](#)
- [4] 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](#)

## Teaching

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### University of Toronto

- Introduction to Combinatorics (MAT344) Fall 2020
- Concepts in Abstract Mathematics (MAT246) Winter 2020

### Jesus College, University of Oxford

- Linear Algebra I (1<sup>st</sup> year) Fall 2018
- Introduction to University Mathematics (1<sup>st</sup> year) Fall 2018
- Introduction to Complex Numbers (1<sup>st</sup> year) Fall 2018
- Linear Algebra II (1<sup>st</sup> year) Winter 2019
- Groups and Group Actions (1<sup>st</sup> year) Winter–Spring 2019
- Topology (2<sup>nd</sup> year) Winter 2019
- Group Theory (2<sup>nd</sup> year) Spring 2019

### Mathematical Institute, University of Oxford

- Commutative Algebra (3<sup>rd</sup> year); TA. Winter 2018
- Lie Algebras (4<sup>th</sup> year); Tutor. Fall 2017
- Lie Algebras (4<sup>th</sup> year); Tutor. Spring 2017
- Representation Theory of Semisimple Lie Algebras (4<sup>th</sup> year); TA. Winter 2017
- Lie Algebras (4<sup>th</sup> year); TA. Fall 2016

## Talks

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1. *Symplectic reduction along a submanifold and the Moore–Tachikawa TQFT* 3 September 2020  
 Northeastern University  
 Geometry, Physics, and Representation Theory Seminar
2. *Hyperkähler structures on holomorphic symplectic groupoids* 7 June 2020  
 Online conference on  
 Lie theory and integrable systems in symplectic and Poisson geometry
3. *Hyperkähler structures on symplectic realizations of holomorphic Poisson surfaces* 28 May 2020  
 CIRM virtual event  
 School on Geometry and Dynamics of Foliations
4. *Kempf–Ness type theorems and Nahm’s equations* 7 Dec 2019  
 2019 Canadian Mathematical Society Winter Meeting

- Algebraic Geometry and Representation Theory  
Toronto, Canada
5. *Stratified hyperkähler spaces, GIT, and Nahm's equations* 5 Dec 2019  
Boston College  
Geometry and Topology Seminar
  6. *Symplectic reduction, GIT quotients, and Nahm's equations* 21 Nov 2019  
McMaster University  
Geometry and Topology Seminar
  7. *Singular hyperkähler reduction and geometric invariant theory* 11 Nov 2019  
University of Toronto  
Symplectic Geometry Seminar
  8. *Two lectures on Nahm's equations* 30–31 Oct 2019  
The Fields Institute  
Geometric Structures Laboratory Seminar
  9. *Symplectic reduction, GIT quotients, and Nahm's equations* 11 Oct 2019  
CIRGET (Centre interuniversitaire de recherches en géométrie et topologie)  
Geometry and Topology Seminar
  10. *Singular hyperkähler quotients* 16 May 2019  
University of Duisburg-Essen, Germany  
The Essen Seminar for Algebraic Geometry and Arithmetic
  11. *TQFTs with values in holomorphic symplectic varieties* 14 Feb 2019  
University of Oxford  
Junior Geometry and Topology Seminar
  12. *Stratified hyperkähler spaces* 06 Feb 2019  
Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark  
QGM seminars
  13. *Hyperkähler quotients and geometric invariant theory* 05 Feb 2019  
Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark  
Introductory seminars
  14. *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
  15. *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
  16. *Stratified hyperkähler spaces* 15 Jun 2018  
University of Edinburgh  
GLEN Algebraic Geometry Seminar
  17. *Stratified hyperkähler spaces* 05 Mar 2018  
University of Oxford  
Geometry and Analysis Seminar
  18. *Symplectic reduction and geometric invariant theory* 08 Feb 2018  
University of Oxford

- Junior Geometry and Topology Seminar
19. *Stratified Spaces and Nahm Equations* 11 Apr 2017  
University of Oxford  
Junior Geometry and Topology 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
22. *A hyperkähler metric on the cotangent bundle of a complex reductive group* 02 Jun 2016  
University of Oxford  
Junior Geometry and Topology Seminar

## 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) 2019–2021  
*Declined*

### University of Oxford

- Moussouris Scholarship, University of Oxford (3.5 years) 2015–2019  
Covers all tuition fees, college fees, and living expenses.
- NSERC CGS D (2 years) 2017–2019  
Alexander Graham Bell Canada Graduate Scholarships–Doctoral Program  
*Declined*
- NSERC PGS D (2 years) 2017–2019  
Postgraduate Scholarships–Doctoral Program
- FRQNT doctoral scholarship (2 years) 2017–2019  
*Declined*
- 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  
Supervisor: Prof. Niky Kamran.
- Kamran Undergraduate Award Summer 2013  
Supervisor: Prof. Niky Kamran.