

Maxence Mayrand

Curriculum Vitae — May 2019

Contact

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Address Mathematical Institute
 University of Oxford
 Woodstock Road
 Oxford, OX2 6GG
 United Kingdom

Education

DPhil in Mathematics — University of Oxford 2015–present
Supervisor: Prof. Andrew Dancer
Thesis: *Stratified hyperkähler spaces and Nahm equations*
Expected: June 2019

BSc Honours Mathematics — McGill University 2012–2015
Mentor: Prof. Niky Kamran
First Class Honours; Dean’s Honour List; Final grade 4.0/4.0.

Employment

Postdoctoral Fellow scheduled Aug 2019
University of Toronto

Lecturer in Pure Mathematics Sep 2018–present
Jesus College, University of Oxford

Research interests

My research is in hyperkähler geometry and its interesting connections with Lie theory and mathematical physics which arise through gauge theory.

Publications and preprints

- [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 experience

Jesus College, University of Oxford

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

Mathematical Institute, University of Oxford

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

Talks

Invited presentations

1. *Singular hyperkähler quotients* 16 May 2019
University of Duisburg-Essen, Germany
The Essen Seminar for Algebraic Geometry and Arithmetic
2. *Stratified hyperkähler spaces* 06 Feb 2019
Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark
QGM seminars
3. *Nahm's equations, groupoids, and Higgs bundles* 25 Jul 2018
(*Part II of a 4-hour mini-course on my thesis work*)
The Fields Institute, Toronto, Canada
Geometric Structures Laboratory Seminar
4. *Stratified hyperkähler spaces and Nahm's equations* 24 Jul 2018
(*Part I of a 4-hour mini-course on my thesis work*)

- The Fields Institute, Toronto, Canada
Geometric Structures Laboratory Seminar
5. *Stratified hyperkähler spaces* 15 Jun 2018
University of Edinburgh, UK
GLEN Algebraic Geometry Seminar
 6. *Stratified hyperkähler spaces* 05 Mar 2018
University of Oxford, UK
Geometry and Analysis Seminar
 7. *Nahm equations, stratified hyperkähler spaces and the Moore–Tachikawa category.* 30 Mar 2017
ICTS, Tata Institute of Fundamental Research, Bangalore, India
ICTS Special Seminar
 8. *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

Student seminars

1. *TQFTs with values in holomorphic symplectic varieties* 14 Feb 2019
University of Oxford, UK
Junior Geometry and Topology Seminar
2. *Hyperkähler quotients and geometric invariant theory* 05 Feb 2019
Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark
Introductory seminars
3. *Symplectic reduction and geometric invariant theory* 08 Feb 2018
University of Oxford, UK
Junior Geometry and Topology Seminar
4. *Stratified Spaces and Nahm Equations* 11 Apr 2017
University of Oxford, UK
Junior Geometry and Topology Seminar
5. *A hyperkähler metric on the cotangent bundle of a complex reductive group* 02 Jun 2016
University of Oxford, UK
Junior Geometry and Topology Seminar

Scholarships and awards

University of Oxford (DPhil)

- Moussouris Scholarship (3.5-year scholarship) 2015–2019
Covers all tuition fees, college fees, and living expenses.
Awarded by the Mathematical Institute, University of Oxford.
- NSERC CGS D (2-year scholarship) 2017–2019
Alexander Graham Bell Canada Graduate Scholarships-Doctoral Program.
\$35,000 per year (declined)
- NSERC PGS D (2-year scholarship) 2017–2019
Postgraduate Scholarships-Doctoral Program.

- \$21,000 per year

- FRQNT doctoral scholarship (2-year scholarship) 2017–2019
 - \$21,000 per year (declined)
- FRQNT master scholarship (2-year scholarship) 2015–2017

\$21,500 per year

McGill University (BSc)

- Dean's Honour List May 2015

Top 10% of the Faculty of Science.
- First Class Honours in Mathematics May 2015

Final GPA $\geq 3.5/4.0$ (it was 4.0/4.0).
- Gowrisankaran Prize in Mathematics and Statistics (\$1,490) May 2015

Awarded annually to an outstanding student in their final year.
- NSERC Undergraduate Student Research Award Summer 2014

\$5,625 to carry an undergraduate research project.

Supervisor: Prof. Niky Kamran.
- Kamran Undergraduate Award Summer 2013

\$2,800 to carry an undergraduate research project.

Supervisor: Prof. Niky Kamran.

Personal details

Nationality Canadian