Maxence Mayrand
Curriculum Vitae | May 2025

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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
  Supervisor: Prof. Marco Gualtieri

Education

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

McGill University | BSc Honours Mathematics   2012–2015

Papers

[1] Burelle, J-P., Maiza, M.M., Mayrand, M., *Deformations of quasi-Hamiltonian spaces.*
    arXiv:2505.16689

[2] Crooks, P., Mayrand, M., *Grothendieck-Springer resolutions and TQFTs.*
    arXiv:2504.10285

[3] Crooks, P., Mayrand, M., *The Moore-Tachikawa conjecture via shifted symplectic geometry.*
    arXiv:2409.03532

[4] Crooks, P., Mayrand, M., *Scheme-theoretic coisotropic reduction.*
    arXiv:2408.11932

[5] Mayrand, M., *Shifted coisotropic structures for differentiable stacks.*
    Advances in Mathematics, **475** (2025)

[6] Bălibanu, A., Mayrand, M., *Reduction along strong Dirac maps.*
    arXiv:2210.07200

[7] Crooks, P., Mayrand, M., *Symplectic reduction along a submanifold.*
    Compositio Mathematica, **158** (2022)

[8] Mayrand, M., *Hyperkähler metrics near Lagrangian submanifolds and symplectic groupoids.*
    J. Reine Angew. Math. (Crelle's Journal), **782** (2022)

[9] Mayrand, M., *Kempf–Ness type theorems and Nahm equations.*
    Journal of Geometry and Physics, **136** (2019)

[10] Mayrand, M., *Stratification of singular hyperkähler quotients.*
Complex Manifolds, **9** (2022)

[11] Mayrand, M., *Stratified hyperkähler spaces from semisimple Lie algebras.*
Transformation Groups, **25** (2020)

[12] Mayrand, M., *Particle motion in monopoles and geodesics on cones.*
Symmetry, Integrability and Geometry: Methods and Applications (SIGMA), **10** (2014)

PhD thesis (University of Oxford, 2019)
Stratifed 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

- 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
- 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

Teaching

Université de Sherbrooke

- Théorie quantique (MAT458)   Fall 2024
- Analyse II (MAT346)   Fall 2024
- 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. *Scheme-theoretic coisotropic reduction*   21 Nov 2024
   Gamma seminar
   University of Warsaw
2. *The Moore-Tachikawa conjecture via shifted symplectic geometry*   24 Oct 2024
   Mathematical physics seminar
   Perimeter Institute for Theoretical Physics
3. *The Moore-Tachikawa conjecture via shifted symplectic geometry*   15 Jul 2024
   Workshop on Hamiltonian Geometry and Quantization, The Fields Institute
4. *Shifted coisotropic structures and Moore–Tachikawa TQFTs*   13 Mar 2024
   CIRGET, Algebraic Geometry Seminar
5. *Shifted coisotropic structures for differentiable stacks*   4 Mar 2024
   The Fields Institute, Geometric Structures Laboratory Seminar
6. *Shifted coisotropic structures for differentiable stacks*   28 Feb 2024
   University of Göttingen, Higher Structures Seminar
7. *Hyperkähler metrics via deformation theory*   10 Mar 2023
   CIRGET, Séminaire de géométrie et topologie
8. *Reduction of Dirac realizations*   4 Jan 2023
   2023 Joint Mathematics Meetings, Boston
   AMS Special Session on Integrable Systems and Symplectic Group Actions
9. *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
10. *Twistor constructions of hyperkähler and hypercomplex structures*   3 Dec 2022
    near complex submanifolds
    2022 CMS Winter Meeting, Toronto
    Complex Geometry and Moduli Space
11. *Reduction of Dirac realizations*   17 Nov 2022
    Global Poisson Webinar
12. *Dirac reduction and shifted symplectic geometry*   8 Feb 2022
    SwissMAP Research Station, Les Diablerets
    Differentiable Stacks, Poisson Geometry and related geometric structures
13. *Dirac reduction along a submanifold*   10 Jan 2022
    CIRM, Luminy
    Lie Theory and Poisson Geometry
14. *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
15. *Hyperkähler metrics near Lagrangian submanifolds and*   22 Jan 2021
    symplectic groupoids
    Geometry and Topology Seminar
    University of Waterloo

16. *Hyperkähler metrics near Lagrangian submanifolds and*   11 Jan 2021
    symplectic groupoids
        Differential Geometry Research Seminar
        University of Hamburg
17. *Hyperkähler realizations of holomorphic Poisson surfaces*   11 Dec 2020
        Friday Fish Seminar
        Utrecht University
18. *Mini-course on Symplectic Reduction and Geometric Invariant Theory*   3 Dec 2020
        2020 Canadian Mathematical Society Winter Meeting
19. *Symplectic reduction along a submanifold and the Moore–Tachikawa TQFT* 3 Sep 2020
        Northeastern University
        Geometry, Physics, and Representation Theory Seminar
20. *Hyperkähler structures on holomorphic symplectic groupoids*   7 Jun 2020
        Workshop on Lie theory and integrable systems in symplectic and
        Poisson geometry
21. *Hyperkähler structures on symplectic realizations of*   28 May 2020
    holomorphic Poisson surfaces
        School on Geometry and Dynamics of Foliations
        CIRM
22. *Kempf-Ness type theorems and Nahm's equations*   7 Dec 2019
        2019 Canadian Mathematical Society Winter Meeting
        Algebraic Geometry and Representation Theory
        Toronto, Canada
23. *Stratified hyperkähler spaces, GIT, and Nahm's equations*   5 Dec 2019
        Boston College
        Geometry and Topology Seminar
24. *Symplectic reduction, GIT quotients, and Nahm's equations*   21 Nov 2019
        McMaster University
        Geometry and Topology Seminar
25. *Singular hyperkähler reduction and geometric invariant theory*   11 Nov 2019
        University of Toronto
        Symplectic Geometry Seminar
26. *Two lectures on Nahm's equations*   30–31 Oct 2019
        The Fields Institute
        Geometric Structures Laboratory Seminar
27. *Symplectic reduction, GIT quotients, and Nahm's equations*   11 Oct 2019
        CIRGET (Centre interuniversitaire de recherches en géométrie et topologie)
        Geometry and Topology Seminar
28. *Singular hyperkähler quotients*   16 May 2019
        University of Duisburg-Essen, Germany
        The Essen Seminar for Algebraic Geometry and Arithmetic
29. *Stratified hyperkähler spaces*   6 Feb 2019
        Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark
        QGM seminars

30. *Hyperkähler quotients and geometric invariant theory*   5 Feb 2019
    Centre for Quantum Geometry of Moduli Spaces, Aarhus, Denmark
    Introductory seminars
31. *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
32. *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
33. *Stratified hyperkähler spaces*   15 Jun 2018
    University of Edinburgh
    GLEN Algebraic Geometry Seminar
34. *Stratified hyperkähler spaces*   5 Mar 2018
    University of Oxford
    Geometry and Analysis Seminar
35. *Nahm equations, stratified hyperkähler spaces and the Moore–Tachikawa*   30 Mar 2017
    category.
    ICTS, Tata Institute of Fundamental Research, Bangalore, India
    ICTS Special Seminar
36. *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