

James Taylor

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Education

University of Oxford

DPhil in Pure Mathematics

Supervisor: Konstantin Ardakov

Thesis Title: Vector Bundles on Drinfeld Spaces

Oxford, UK

10/2020 - Present

University of Warwick

MMath Mathematics

First Class Honours

Coventry, UK

10/2016 - 06/2020

Preprints

- Equivariant Vector Bundles with Connection on Drinfeld Symmetric Spaces.
Available on request.

Publications

- Line Bundles on the First Drinfeld Covering.
To appear in Épijournal de Géométrie Algébrique, arXiv: 2307.12942.
- The Picard Group of Vertex Affinoids in the First Drinfeld Covering.
Math. Proc. of the Cambridge Philosophical Society, Volume 175, Issue 2, Sept. 2023, Pages 423-432.
- Real Representations of C_2 -Graded Groups: The Linear and Hermitian Theories.
(with D. Rumynin) *Higher Structures, Volume 6, Issue 1, July 2022, Pages 359-374.*
- Real Representations of C_2 -Graded Groups: The Antilinear Theory.
(with D. Rumynin) *Linear Algebra and its Applications, Volume 610, Feb. 2021, Pages 135-168.*

Talks

- \mathcal{D} -Modules and p -adic Representations
North Meets South Colloquium, Oxford 03/2024
- Representations of $GL_n(F)$ and Equivariant \mathcal{D} -Modules on Drinfeld Symmetric Spaces
Cambridge Algebra and Representation Theory Seminar 03/2024
LSGNT Junior Number Theory Seminar 03/2024
Renyi Institute, Budapest 01/2024
- The Montreal Functor
Oxford Seminar on p -adic Langlands 02/2024
- Picard Groups of Drinfeld Spaces
YRANT Conference, Cambridge 09/2023
- Formal Groups in Number Theory
LSGNT Junior Number Theory Seminar 03/2023
- The Lubin-Tate Tower
Oxford Rapoport-Zink Spaces Study Group 02/2023
- Formal Groups and Drinfeld Symmetric Spaces
Oxford Algebra Seminar 11/2022
- Local Galois Deformation Rings
Oxford Modularity Lifting Theorems Study Group 10/2022

- Rings of Holomorphic Functions in the Variable π
Oxford Fargues-Fontaine Curve Study Group 10/2022
- Representations of GL_2 and p -adic Symmetric Spaces
Cambridge Junior Algebra and Number Theory Seminar 05/2022
Oxford Junior Algebra and Representation Theory Seminar 02/2022
Warwick Postgraduate Seminar 02/2022
- Formalism of Period Rings
Oxford p -adic Hodge Theory Study Group 02/2022
- Real Representations of C_2 -Graded Groups
Junior London Algebra Colloquium 03/2021
Oxford Junior Algebra Seminar 11/2020
Birmingham-Warwick Algebra Seminar 11/2020
- Finite Flat Group Schemes
Oxford p -Divisible Groups Study Group 10/2020

Activities

Oxford Junior Number Theory Seminar

Co-organiser 09/2023 - Present

Oxford Junior Algebra and Representation Theory Seminar

Co-organiser 09/2022 - 8/2023

Study Groups

Co-organiser 01/2022 - Present

Planned and coordinated study groups at Oxford on the following topics:

- p -adic Hodge Theory,
- The Fargues-Fontaine Curve,
- Rapoport-Zink Spaces,
- The p -adic Langlands Correspondence.

WIMP (Warwick-Imperial) Conference

Co-organiser 10/2019 - 06/2020

Warwick Maths Society

Talks Coordinator 10/2018 - 06/2019

Conferences Attended

- Young Researchers in Algebraic Number Theory (YRANT), *Cambridge* 09/2023
- The Automorphic Side of the p -adic Langlands Program, *Wuppertal* 07/2023
- Number Theory Meets p -adic Representations, *Münster* 02/2023
- Smooth Representations of $GL_n(\mathbb{Q}_p)$ in Natural Characteristic, *Oxford* 07/2022
- Topology and Arithmetic Around the Langlands Program, *Stockholm* 06/2022
- London-Paris Number Theory Seminar (online), *Kings College London* 05/2022
- Locally Analytic Representations of p -adic Groups, *Cambridge* 09/2021
- Conference on Arithmetic Geometry in Honour of Luc Illusie (online), *IHES* 06/2021
- Spring School: Towards a mod- p Langlands Correspondence (online), *Essen* 04/2021
- Tropical Geometry, Berkovich Dpaces, Arithmetic \mathcal{D} -Modules and p -adic Local Systems (online), *Imperial College London* 12/2020

Teaching

Mansfield College

Stipendiary Lecturer in Pure Mathematics

10/2021 - Present

Tutorials for Metric Spaces, Linear Algebra, Group Theory, Graph Theory and Number Theory. Undergraduate admissions interviews.

University of Georgia at Oxford

Tutor

10/2023 - 03/2024

M1 Linear Algebra, Introduction to Calculus.

Stanford Overseas

Tutor

10/2022 - 12/2022

B2.1 Representation Theory.

Sarah Lawrence Programme

Tutor

10/2021 - 04/2022

B2.1 Representation Theory and C2.3 Representation Theory of Semisimple Lie Algebras

Oxford Mathematical Institute

Tutor and Teaching Assistant

10/2020 - 06/2021

B2.1 Representation Theory and C2.5 Non-Commutative Rings.

Warwick Mathematics Institute

Student Supervisor

10/2019 - 06/2020

Tutorials for 10 first year students across all first year modules.

Grants and Awards

- EPSRC 4-Year DPhil Scholarship 2020-2024
- URSS (Warwick) Undergraduate Research Bursary 2020
- LMS Undergraduate Research Bursary 2019

Additional Skills

- Experience with Magma, Sage, \LaTeX , Matlab, Java, Python and C++.
- Languages: English (native), Italian (intermediate).