

Martin Gallauer

Curriculum Vitae

Mathematics Institute
University of Warwick
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ACADEMIC POSITIONS

- 2023–? **University of Warwick**
Assistant Professor
- 2021–2022 **Max Planck Institute for Mathematics, Bonn**
Postdoctoral Fellow
- 2018–2021 **Oxford University**
Titchmarsh Research Fellow
- 2015–2018 **University of California, Los Angeles**
Hedrick Assistant Adjunct Professor

EDUCATION

- 2015 **PhD Mathematics**, *University of Zurich*
Advisor: Joseph Ayoub
- 2011 **MA Philosophy**, *University of Zurich*
- 2011 **MS Mathematics**, *University of Zurich*
- 2011 **BS Mathematics**, *University of Zurich*
- 2007–2008 Erasmus student exchange, *LMU Munich*

RESEARCH ARTICLES

- Permutation, stabilization and decomposition
with Paul Balmer
Preprint available at [arXiv:2604.17483](https://arxiv.org/abs/2604.17483)
- Periods in equivariant and motivic contexts
with an appendix by Ivo dell'Ambrogio
Preprint available at [arXiv:2511.14325](https://arxiv.org/abs/2511.14325)
- Patch-density in tensor-triangular geometry
with Paul Balmer
Proceedings of the AMS (accepted)
Preprint available at [arXiv:2503.15274](https://arxiv.org/abs/2503.15274)

- The spectrum of Artin motives
with Paul Balmer
Transactions of the AMS 378 (2025), 1733–1754
[doi:10.1090/9306](https://doi.org/10.1090/9306)
- The geometry of permutation modules
with Paul Balmer
Inventiones Mathematicae 241 (2025), p. 841–928
[doi:10.1007/s00222-025-01350-z](https://doi.org/10.1007/s00222-025-01350-z)
- Motivic monodromy and p -adic cohomology theories
with Federico Binda, Alberto Vezzani
J. Eur. Math. Soc. (2025), online first
[doi:10.4171/jems/1634](https://doi.org/10.4171/jems/1634)
- Exponentiation of coefficient systems and exponential motives
with Simon Pepin Lehalleur
Preprint available at [arXiv:2211.17247](https://arxiv.org/abs/2211.17247)
- Supports for constructible systems
Documenta Mathematica 27 (2022), p. 1739–1772
[doi:10.25537/dm.2022v27.1739-1772](https://doi.org/10.25537/dm.2022v27.1739-1772)
- The six-functor formalism for rigid analytic motives
with Joseph Ayoub, Alberto Vezzani
Forum of Mathematics, Sigma 10 (2022), p. 1–182
[doi:10.1017/fms.2022.55](https://doi.org/10.1017/fms.2022.55)
Erratum at [doi:10.1017/fms.2024.97](https://doi.org/10.1017/fms.2024.97)
- The universal six-functor formalism
with Brad Drew
Annals of K-theory 7:4 (2022), p. 599–649
[doi:10.2140/akt.2022.7.599](https://doi.org/10.2140/akt.2022.7.599)
- Permutation modules and cohomological singularity
with Paul Balmer
Commentarii Mathematici Helvetici 97:3 (2022), p. 413–430
[doi:10.4171/CMH/534](https://doi.org/10.4171/CMH/534)
- Finite permutation resolutions
with Paul Balmer
Duke 172:2 (2023), p. 201–229
[doi:10.1215/00127094-2022-0041](https://doi.org/10.1215/00127094-2022-0041)
- A note on Tannakian categories and mixed motives
Bulletin of the LMS 53 (2021), p. 119–129
[doi:10.1112/blms.12405](https://doi.org/10.1112/blms.12405)

- Three real Artin-Tate motives
with Paul Balmer
Advances in Mathematics 406 (2022), p. 1–68
[doi:10.1016/j.aim.2022.108535](https://doi.org/10.1016/j.aim.2022.108535)
- tt-geometry of Tate motives over algebraically closed fields
Compositio 155 (2019), p. 1888–1923
[doi:10.1112/S0010437X19007528](https://doi.org/10.1112/S0010437X19007528)
- Tensor triangular geometry of filtered modules
Algebra and Number Theory 12 (2018), p. 1975–2003
[doi:10.2140/ant.2018.12.1975](https://doi.org/10.2140/ant.2018.12.1975)
- An isomorphism of motivic Galois groups
with Utsav Choudhury
Advances in Mathematics 313 (2017), p. 470–536
[doi:10.1016/j.aim.2017.04.006](https://doi.org/10.1016/j.aim.2017.04.006)
- Homotopy theory of dg sheaves
with Utsav Choudhury
Communications in Algebra 47 (2019), p. 3202–28
[doi:10.1080/00927872.2018.1554744](https://doi.org/10.1080/00927872.2018.1554744)
- Traces in monoidal derivators, and homotopy colimits
Advances in Mathematics 261 (2014), p. 26–84
[doi:10.1016/j.aim.2014.03.029](https://doi.org/10.1016/j.aim.2014.03.029)

LECTURE NOTES, SURVEYS

- An introduction to six-functor formalisms
Motivic Geometry, Open Book Series Vol. 6
[doi:10.2140/obs.2025.6.63](https://doi.org/10.2140/obs.2025.6.63)
- Permutation modules, Mackey functors, and Artin motives
with Paul Balmer
Representations of Algebras and Related Structures, Proceedings of ICRA2020, EMS Press, p. 37–75
[doi:10.4171/ECR/19/3](https://doi.org/10.4171/ECR/19/3)

OTHER DOCUMENTS

- Statistical mechanics of kinks on a gliding screw dislocation
with Boleininger, Dudarev, Swinburne, Mason, Perez
Physical Review Research 2 (2020)
[doi:10.1103/PhysRevResearch.2.043254](https://doi.org/10.1103/PhysRevResearch.2.043254)
- Traces, homotopy theory, and motivic Galois groups
PhD thesis, available at mgallauer.warwick.ac.uk
[doi:10.5167/uzh-121466](https://doi.org/10.5167/uzh-121466)

- The Lefschetz-Verdier trace formula and a generalization of a theorem of Fujiwara following Varshavsky
MSc thesis, available at mgallauer.warwick.ac.uk
- Beweise und mathematisches Wissen (Proofs and mathematical knowledge)
MA thesis, available at mgallauer.warwick.ac.uk

SUPERVISION

PhD students, *Warwick*

- Mak Peihar, 2025–?
- Daniel Roebuck, 2024–?
- Yorick Fuhrmann, 2023–?
- Pier Federico Pacchiarotti, 2023–? (co-supervised with Gonçalo Tabuada)

R-project students, *Warwick*

- Sean Tierney, 2025–6 (→PhD at ?)
- Henry Harman, 2024–5 (→PhD at Imperial)
- Matteo Galbiati, 2024–5 (external student from Milan)
- Jean-Paul Schemeil, 2023–4 (→PhD in Nottingham)
- Jack Walsh, 2023–4 (→PhD at IMAR Bucharest)

Part C students, *Oxford*

- Callum Berry (2021) (→PhD in Lancaster)
- Lucas de Jong (2021)
- Zecheng Yi (2021) (→PhD at Boston University)
- Benjamin Zayton (2020) (→PhD in Vienna)
- Simon Cooper (2019) (→PhD at Stockholm University)
- William Fourie (2019)
- Si Yu How (2019)
- Jesse Pajwani (2019) (→PhD at Imperial)

AWARDS/GRANTS

- EPSRC New Investigator Award (2026–29)
- Titchmarsh research fellowship, Oxford (2018–2021)
- Licenciate Prize, University of Zurich (2011)
- Bachelor's studies award, University of Zurich (2011)

TEACHING

Warwick

- Geometry
- Introduction to Algebraic Topology

- ∞ -categories: a first course

UCLA

- Mathematical Cryptology
- Multivariable Calculus
- Discrete Structures
- Algebra
- Algebraic Geometry
- Linear Algebra and Applications
- Analysis

LECTURE SERIES

- 9/2026 *Motivic tensor-triangular geometry (? lectures)*
Motivic Midlands, Nottingham
- 6/2026 *Introduction to tensor-triangular geometry (3 lectures)*
ICRA 2026, Grenoble
- 1/2026 *Stable \mathbb{A}^1 -homotopy theory (4 lectures)*
Motives winter school, Montpellier
- 9/2021 *An introduction to six-functor formalisms (3 lectures)*
The six-functor formalism and motivic homotopy theory, Milan

INVITED TALKS AT CONFERENCES AND WORKSHOPS

- 06/2026 *The stable permutation category*
“Groups, representations, and cohomology”, celebration of Dave Benson’s 70th birthday, ICMS Edinburgh
- 02/2026 *Local periods in group cohomology and beyond*
Workshop “Cohomology of Finite Groups: Interactions and Applications”, MFO, Oberwolfach
- 09/2025 *Rational motivic tt-geometry*
LMS Research School “Motives, equivariant topology, and tt-geometry”, Warwick
- 06/2025 *Patch dense subsets of the spectrum*
Conference “Derived Representation Theory and Triangulated Categories”, Thessaloniki
- 06/2025 *Around local monodromy*
Workshop “Modern Developments in Geometry and Higher Structures”, BMRC, Washington DC
- 10/2024 *A tale of three geometries*
Workshop “Tale of geometries”, Brussels
- 9/2024 *Reconstructing constructible sheaves*
Conference “Triangulated categories in algebra and geometry”, Prague
- 7/2024 *Permutation modules between geometry and cohomology*
Workshop “Group actions, geometry and cohomology”, Manchester

- 6/2024 *The spectrum of Artin motives*
Conference “Regulators V”, Pisa
- 6/2024 *Three surprises about permutation representations*
Conference “Group actions: algebraic, geometric and combinatorial aspects”, Levico Terme, Italy
- 2/2024 *Analytic motives and nearby cycles*
Conference “Nearby cycles and derived geometry”, Regensburg
- 9/2023 *Going pro in tt-geometry*
Workshop “Tensor-Triangular Geometry and Interactions”, MFO Oberwolfach
- 10/2022 *The tt-geometry of permutation modules*
Workshop “Spectral methods in equivariant mathematics”, HIM Bonn
- 6/2022 *Artin motivic tt-geometry*
Harnessing motivic invariants, Essen
- 4/2022 *Permutation generation*
Workshop “Geometry and Representations”, ZIF Bielefeld
- 5/2020 Canceled due to Covid
87th BLOC Meeting, Bristol
- 4/2019 *Exponentiating Grothendieck’s six functors*
Workshop on Derivators, Regensburg
- 9/2018 *“The End is Nigh!” following Ayoub*
Arbeitsgemeinschaft “Motives, Foliations and the Conservativity Conjecture”, HU Berlin
- 11/2017 *Tensor triangular geometry of Tate motives*
AMS Fall Western Sectional Meeting (Special Session on Algebraic Geometry), UC Riverside
- 11/2017 *Tensor triangular geometry of filtered modules*
AMS Fall Western Sectional Meeting (Special Session on Homotopy Theory), UC Riverside
- 9/2017 *Motivic Galois groups in characteristic 0*
Motives for periods, FU Berlin
- 3/2017 *Motivic Galois groups, following Ayoub and Nori*
Hot topics: Galois theory of periods and applications, MSRI
- 9/2015 *Traces in monoidal derivators*
Dérivateurs à Barcelone, University of Barcelona

SEMINAR AND COLLOQUIUM TALKS

- 3/2026 *Periods in equivariant and motivic tt-geometry*
New Directions in Group Theory and Triangulated Categories (online)
- 6/2025 *Around local monodromy*
Algebra Seminar, UCLA
- 5/2025 *Around local monodromy*
Colloquium, UCSC

- 4/2025 *Around local monodromy*
Algebraic Geometry Seminar, Glasgow
- 12/2024 *Three surprises about permutation representations*
Algebra Seminar, Bristol
- 5/2024 *Motivic monodromy and p -adic cohomology theories*
Seminar, Nottingham
- 2/2024 *Motivic tt -geometry*
Seminar on Arithmetic Geometry, TU Darmstadt (online)
- 2/2024 *Motivic monodromy and p -adic cohomology theories*
Number Theory, Algebra and Geometry Seminar, Exeter
- 11/2023 *On dense cohomological invariants*
FD seminar, online
- 6/2023 *Motivic monodromy and p -adic cohomology theories*
Algebraic geometry seminar, Heidelberg
- 6/2023 *Motivic monodromy and p -adic cohomology theories*
Arithmetic geometry seminar, École Polytechnique, Paris
- 4/2023 *Motivic monodromy and p -adic cohomology theories*
Algebraic geometry seminar, Bogotá (online)
- 4/2023 *Permutation generation*
Algebraic Topology Seminar, Warwick
- 7/2022 *Artin motivic tensor-triangular geometry*
SFB “Higher invariants” seminar, Regensburg
- 7/2022 *The derived category of permutation modules*
Oberseminar Algebra, Stuttgart
- 6/2022 *The derived category of permutation modules*
Oberseminar Algebra, Zahlentheorie und Algebraische Geometrie, Freiburg
- 5/2022 *The derived category of permutation modules*
Oberseminar Algebraische Geometrie, University of Zurich
- 5/2022 *Permutation generation*
Oberseminar Topologie, Wuppertal
- 2/2022 *Cohomological exponentiation*
MPI Oberseminar, Bonn
- 12/2021 *The derived category of permutation modules*
New Directions in Group Theory and Triangulated Categories (online)
- 2/2021 *Cohomological Singularity*
BIREP – Representations of finite dimensional algebras at Bielefeld (online)
- 4/2020 Canceled due to Covid
Algebra and Analysis Seminar, Nottingham
- 2/2020 *Motivic tt -geometry*
INI Seminar, Cambridge

- 12/2019 *Simplicity of Tannakian categories, and applications*
Arithmetic Geometry seminar, HU Berlin
- 10/2019 *Simplicity of Tannakian categories*
COW seminar
- 9/2019 *Simplicity of Tannakian categories in characteristic zero*
Algebra seminar, Glasgow
- 5/2019 *Filtered modular representation theory and motivic tt-geometry*
Topology seminar, Sheffield
- 4/2019 *Filtered modular representation theory and motivic tt-geometry*
Algebra seminar, Manchester
- 4/2019 *How many real Artin-Tate motives are there?*
KTH & SU Algebra and Geometry seminar, Stockholm
- 3/2019 *How many real Artin-Tate motives are there?*
Autour des cycles algébriques, Paris
- 3/2019 *How many real Artin-Tate motives are there?*
Algebraic Geometry Seminar, Oxford
- 2/2019 *How many real Artin-Tate motives are there?*
London Number Theory seminar, London
- 1/2019 *Motivic tt-geometry*
Algebra seminar, IMPA
- 4/2018 *Motivic tt-geometry*
Algebra seminar, UCLA
- 1/2018 *Motivic tt-geometry*
Colloquium, University of Alberta
- 1/2018 *Motivic tt-geometry*
Topics in Higher Category Theory seminar, Regensburg
- 1/2018 *Motivic tt-geometry*
Algebra/Topology seminar, University of Copenhagen
- 04/2016 *Motivic Hopf Algebras*
Algebra seminar, USC
- 02/2016 *Traces and homotopy colimits*
Topology seminar, UCLA
- 11/2015 *An isomorphism of motivic Galois groups*
Algebra seminar, UCLA
- 9/2015 *Traces and homotopy colimits*
Topology seminar, MIT
- 5/2014 *Traces in monoidal derivators*
Oberseminar Topologie, Osnabrück
- 5/2014 *An isomorphism of motivic Galois groups*
Oberseminar: Algebra, Zahlentheorie und algebraische Geometrie, Freiburg

- 3/2013 *Traces in monoidal derivators, and homotopy colimits*
Groupe de travail “Algèbre et Topologie Homotopiques”, Paris VII
- 4/2011 *The Lefschetz-Verdier trace formula and a generalization of a theorem of Fujiwara*
ProDoc seminar, ETH Zurich

SELECTED EXPOSITORY TALKS

- 04/2026 *Algebraic Geometry*
Pizza seminar, Milan
- 04/2026 *Nori vs Voevodsky motives*
REMOLD seminar, Padova
- 11/2024 *Derived commutative algebraic geometry*
Algebraic Topology seminar, Warwick
- 11/2021 *Motivic tt -geometry*
MPI Topology seminar, Bonn
- 12/2020 *Algebraic algebraic geometry*
Colloquium, EPFL
- 10/2020 *Algebraic algebraic geometry*
North meets South Colloquium, Oxford
- 5/2016 *Rigid analytic geometry*
Joint UCLA/USC Algebra seminar
- 11/2015 *“Hypersurfaces quartiques de dimension 3: non rationalité stable” following Colliot-Thélène and Pirutka*
Joint UCLA/USC Algebra seminar
- 7/2014 *The p -adic periods of formal groups with formal multiplication*
Summer school “Periods and heights of CM abelian varieties”, Alpbach, Austria
- 7/2013 *Galois representations for high weight modular forms*
Summerschool “ p -adic Modular Forms”, Alpbach, Austria
- 12/2012 *What is... the trace of an endomorphism?*
Zurich Graduate Colloquium, ETH & University of Zurich
- 9/2012 *Mixed Tate motives over \mathbb{Z}*
Summer school “Multiple Zeta-Values”, Alpbach, Austria
- 7/2011 *Diagrams: Multiplicative structure and localization*
Summer school “Motives, periods and transcendence”, Alpbach, Austria

LONGER RESEARCH VISITS

- 9–12/2022 HIM, Bonn, Germany
- 2–3/2020 Isaac Newton Institute, Cambridge, UK
- 3–4/2019 ETH Institute for Theoretical Sciences, Switzerland
- 1–2/2019 IMPA, Brazil
- 9/2018 Freiburg, Germany

SELECTED SERVICE

- Algebraic Topology Seminar, Warwick (2024–?)
- Oxford Number Theory Seminar (2019–2020)
- Western Algebraic Geometry Symposium, IPAM, UCLA (2017)
- **Refereeing** for *Advances in Mathematics*, *Algebraic and Geometric Topology*, *Applied Categorical Structures*, *Bulletin of the London Mathematical Society*, *Commentarii Mathematici Helvetici*, *Compositio Mathematica*, *Cambridge University Press*, *Crelle's Journal für die reine und angewandte Mathematik*, *Documenta Mathematica*, *Duke Mathematical Journal*, *Épjournal de Géométrie Algébrique*, *Forum Sigma*, *Higher Structures*, *International Mathematics Research Notices*, *Inventiones Mathematicae*, *Journal of Algebra*, *Journal of Number Theory*, *Journal of Pure and Applied Algebra*, *Journal of the European Mathematical Society*, *Memoirs of the American Mathematical Society*, *Memoirs of the European Mathematical Society*, *Pacific Journal of Mathematics*, *Quarterly Journal of Mathematics*, *Selecta Mathematica*, *Theory and Applications of Categories*
- Scientific **expert** for French National Research Agency ANR and German DFG
- **External examiner** for PhD's: Colin Ni (UCLA, 2026), Greg Kendall (Manchester, 2025), Swann Tubach (ENS Lyon, 2025), Jule Hänel (Wuppertal, 2024), Gabriel Ribeiro (École Polytechnique, 2024), Charlampos Verasdanis (Glasgow, 2024)
- **Selection panel** for Zeeman Lectureship, Warwick (2023)
- Departmental **INI-ICMS correspondent**, Warwick (2023–?)
- Oxford undergraduate **admissions** interviews (2020)
- **Representative** of PhD and postdoctoral students in various committees at the department and university level (Zurich, 2012–2015)
- **Member of the steering committee** of the Association of Non-Professorial Academic Staff at the University of Zurich (**Vauz**) (2014–2015)
- **Delegate** in the Association of the academic midlevel staff at Swiss universities (**actionuni**) (2014–2015)

Last updated: 06/2026