

Marco D'Addezio

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Born: January 07, 1992—Rome, Italy

Nationality: Italian

Married

Current position

2024- Chargé de Recherche CNRS, Institut de Recherche Mathématique Avancée, Strasbourg, France.

Previous positions

2023-2024 Postdoctoral Fellow (MSCA - Project number 101068237), Institut de Mathématiques de Jussieu–Paris Rive Gauche, Paris, France; Mentor: Dr. Matthew Morrow.

2021-2023 Postdoctoral Fellow (DFG - Project number 461915680), Institut de Mathématiques de Jussieu–Paris Rive Gauche, Paris, France; Mentor: Dr. Matthew Morrow.

2019-2021 Postdoctoral Fellow, Max Planck Institute for Mathematics, Bonn, Germany; Mentor: Prof. Peter Scholze.

2019 Postdoctoral Fellow, Free University Berlin, Germany; Mentor: Dr. Simon Pepin Lehalleur.

Areas of specialization

Algebraic Geometry, Number Theory.

Education

2024 Habilitation à diriger des recherches, Strasbourg University, France; Jury: Yves André, Anna Cadoret, Daniel Caro, Lie Fu, Nobuo Tsuzuki; Thesis title: *On the p -adic slope filtration*.

2016–2019	Ph.D. in Mathematics, Free University Berlin, Germany; Supervisors: Prof. Hélène Esnault and Prof. Vasudevan Srinivas; Thesis title: <i>Monodromy groups in positive characteristic</i> .
2015–2016	Master 2 - Analyse, Arithmétique et Géométrie, University Paris Sud, France.
2014–2015	Master 1 - Mathématiques Fondamentales et Appliquées, University Paris Sud, France.
2011–2014	Bachelor in Mathematics, University of Pisa, Italy.

Grants & awards

2025–	Research funding ANR; Project: <i>Equations différentielles p-adiques</i> (pDefi).
2024–	Chargé de recherche of the Centre National de la Recherche Scientifique (CNRS).
2023–2025	Marie Skłodowska-Curie Actions (MSCA) Postdoctoral Fellowship - Project number 101068237. Early termination in 2024.
2021–2023	German Research Foundation (DFG) Postdoctoral Fellowship - Project number 461915680.
2021	Fondation Sciences Mathématiques de Paris (FSMP) Postdoctoral Fellowship (declined).
2021	Huawei Young Talents Program at the IHES Postdoctoral Fellowship (declined).
2020	Ernst Reuter Prize for the PhD thesis.
2019–2021	Max Planck Institute for Mathematics Postdoctoral Fellowship.
2019	Postdoctoral Fellowship at the University of Toronto (declined).
2019	German Research Foundation (DFG) Postdoctoral Fellowship.
2016–2019	Einstein Foundation PhD Fellowship.
2014–2016	Paris Saclay Master Scholarship.
2011–2014	Istituto Nazionale di Alta Matematica Bachelor Scholarship.

Articles & talks

ACCEPTED ARTICLES

2024	M. D’Addezio, Some remarks on the companions conjecture for normal varieties, <i>Comptes Rendus Math.</i> 362 (2024), 63–69.
2024	M. D’Addezio, Boundedness of the p -primary torsion of the Brauer group of an abelian variety, <i>Compos. Math.</i> 160 (2024), 463–480.
2023	M. D’Addezio, Parabolicity conjecture of F -isocrystals, <i>Ann. Math.</i> 198 (2023), 619–656.
2023	M. D’Addezio, Slopes of F -isocrystals over abelian varieties, <i>Doc. Math.</i> 28 (2023), 1–9.
2022	M. D’Addezio, On the semi-simplicity conjecture for $\mathbb{Q}^{\text{ab}}$, <i>Math. Res. Lett.</i> 29 (2022), 1003–1009.
2022	A. Ambrosi and M. D’Addezio, Maximal tori of monodromy groups of F -isocrystals and an application to abelian varieties, <i>Algebraic Geom.</i> 9 (2022), 633–650.
2022	M. D’Addezio and H. Esnault, On the universal extensions in Tannakian categories, <i>Int. Math. Res. Not.</i> 18 (2022), 14008–14033.
2020	M. D’Addezio, The monodromy groups of lisse sheaves and overconvergent F -isocrystals, <i>Sel. Math. New Ser.</i> 26 (2020) 1–41.

PREPRINTS

- 2022 M. D’Addezio, P. van Hoften, *Hecke orbits on Shimura varieties of Hodge type*, [arXiv:2205.10344](https://arxiv.org/abs/2205.10344).

HABILITATION THESIS

- 2024 M. D’Addezio, *On the p -adic slope filtration*, Strasbourg University, <https://theses.hal.science/tel-04821506v1>.

PHD THESIS

- 2019 M. D’Addezio, *Monodromy groups in positive characteristic*, Free University Berlin, <https://webusers.imj-prg.fr/~marco.d-addezio/thesis.pdf> (awarded Ernst-Reuter Prize).

Talks

INVITED TALKS

- 2025 *Hecke orbit conjecture*, Steklov Institute of Mathematics, Moscow, Russia.
- 2025 *The Hecke orbit conjecture*, conference “Arithmetic geometry of K3 surfaces”, Swiss Federal Technology Institute of Lausanne, Switzerland.
- 2025 *Edged crystalline cohomology*, Paris-Saclay University, France.
- 2025 *Edged crystalline cohomology*, University of Padua, Italy.
- 2024 *Chai–Oort Hecke orbit conjecture*, Aix-Marseille University, France.
- 2024 *Edged crystalline cohomology*, conference “ p -adic cohomology and arithmetic geometry”, Tohoku University, Sendai, Japan.
- 2024 *Edged crystalline cohomology*, St. Petersburg Department of Steklov Mathematical Institute, Russia.
- 2024 *Edged crystalline cohomology*, University Tor Vergata, Rome, Italy.
- 2024 *Edged crystalline cohomology*, Exeter, United Kingdom.
- 2023 *Boundedness of the Brauer group of an abelian variety*, Imperial College London, United Kingdom.
- 2023 *Hecke orbits on Shimura varieties*, University of Caen, France.
- 2023 *Hecke orbits on Shimura varieties*, University of Copenhagen, Denmark.
- 2023 *Crew’s parabolicity conjecture* (webinar), Stanford University, United States.
- 2023 *Edged crystalline cohomology*, ENS Lyon, France.
- 2023 *Edged crystalline cohomology*, University of Grenoble, France.
- 2023 *Edged crystalline cohomology*, University of Copenhagen, Denmark.
- 2022 *Crew’s parabolicity conjecture* (webinar), University of Chicago, United States.
- 2022 *Hecke orbits on Shimura varieties*, Journées Arithmétiques du LAGA, University Vincennes-Saint-Denis, Paris, France.
- 2022 *Hecke orbits on Shimura varieties*, University of Zurich, Switzerland.
- 2022 *Crew’s parabolicity conjecture*, conference “ p -adic cohomology and arithmetic geometry 2022”, Tohoku University, Sendai, Japan.

- 2022 *Hecke orbits on Shimura varieties*, Humboldt University of Berlin, Germany.
- 2022 *Hecke orbits on Shimura varieties* (webinar), The University of Hong Kong, China.
- 2022 *Boundedness of the p -primary torsion of the Brauer group of an abelian variety* (webinar), University of Munich, Germany.
- 2022 *Boundedness of the p -primary torsion of the Brauer group of an abelian variety*, University of Wuppertal, Germany.
- 2022 *Parabolicity conjecture of F -isocrystals*, University of Pisa, Italy.
- 2022 *Parabolicity conjecture of F -isocrystals*, University of Strasbourg, France.
- 2022 *Parabolicity conjecture of F -isocrystals* (webinar), University of Wisconsin - Madison, United States.
- 2022 *Boundedness of the p -primary torsion of the Brauer group of an abelian variety* (webinar), University of Warwick, United Kingdom.
- 2021 *Parabolicity conjecture of F -isocrystals and torsion points of abelian varieties*, London-Paris Number Theory Seminar, Paris 13, France.
- 2021 *Monodromy of F -isocrystals and algebraic cycles* (webinar), Paris 13, France.
- 2021 *Torsion points of abelian varieties and F -isocrystals* (webinar), Tata Institute of Fundamental Research, Mumbai, India.
- 2021 *Parabolicity conjecture of F -isocrystals* (webinar), Paris 6, France.
- 2020 *Parabolicity conjecture of F -isocrystals* (webinar), The Chinese University of Hong Kong, China.
- 2020 *Monodromy groups of F -isocrystals* (webinar), Purdue University, United States.
- 2019 *Parabolicity conjecture of F -isocrystals*, Free University Berlin, Germany.
- 2019 *Torsion points of abelian varieties and F -isocrystals*, SPP 1786 Jahrestagung, University of Duisburg-Essen, Germany.
- 2019 *Slope filtration and monodromy groups of F -isocrystals*, conference “Algebraic and p -adic fundamental groups”, University of Caen Normandy, France.
- 2019 *Torsion points of abelian varieties and F -isocrystals*, summer school “Arithmetic of connections”, Ascona, Switzerland.
- 2019 *Torsion points of abelian varieties and F -isocrystals*, University of Regensburg, Germany.
- 2019 *Torsion points of abelian varieties and F -isocrystals*, University of Rome Tor Vergata, Italy.
- 2019 *Finiteness of perfect torsion points of an abelian variety and F -isocrystals*, seminar “Autour des cycles algébriques”, Paris 6, France.
- 2018 *Finiteness of perfect torsion points of an abelian variety and F -isocrystals*, Humboldt University of Berlin, Germany.
- 2018 *Finiteness of perfect torsion points of an abelian variety*, conference “Arithmetic Geometry and de Rham Theory”, Institute of Mathematics-VAST, Hanoi, Vietnam.
- 2018 *Finiteness of perfect torsion points of an abelian variety and F -isocrystals*, Mathematical Institute of the University of Bonn, Germany.
- 2018 *Slopes of F -isocrystals on abelian varieties*, workshop “ F -isocrystals and families of algebraic varieties”, IMPAN, Warsaw, Poland.
- 2018 *On the semi-simplicity conjecture for $\mathbb{Q}^{\text{ab}}$* , North German Algebraic Geometry Seminar 2018, Max Planck Institute for Mathematics in Sciences, Leipzig, Germany.
- 2018 *Finiteness of perfect torsion points of an abelian variety*, University of Freiburg, Germany.
- 2018 *Finiteness of perfect torsion points of an abelian variety*, University of Amsterdam, The Netherlands.

- 2018 *Monodromy groups of F -isocrystals*, workshop “Riemann-Hilbert correspondences”, University of Padua, Italy.
- 2017 *Survey on Deligne conjectures for lisse sheaves*, London Junior Number Theory Seminar, University College London, United Kingdom.
- 2017 *Independence of monodromy groups*, conference “Fundamental Groups in Arithmetic Geometry”, Tuan Chau, Vietnam.

EXTENDED RESEARCH VISITS

- 2025 University of Padua, one week; invited by Prof. Bruno Chiarellotto.
- 2024 University of Exeter, one week; invited by Prof. Christopher Lazda.
- 2023-2024 University of Strasbourg, two months; invited by Prof. Carlo Gasbarri.
- 2023 University of Copenhagen, four weeks; invited by Prof. Lars Hesselholt.
- 2023 University of Grenoble, one week; invited by Prof. Andrea Pulita.
- 2022 University of Wuppertal, one week; invited by Prof. Kay Rülling.
- 2018 University of Freiburg, one week; invited by Dr. Johannes Commelin.
- 2018 University of Chicago, one week; invited by Prof. Vladimir Drinfeld.

TALKS AT THE DEPARTMENT

- 2024 *On the Brauer group*, University of Strasbourg, France.
- 2024 *Edged crystalline cohomology*, University of Strasbourg, France.
- 2022 *Hecke orbits on Shimura varieties*, Sorbonne University, Paris, France.
- 2022 *Boundedness of the p -primary torsion of the Brauer group of an abelian variety* (2 talks), Sorbonne University, Paris, France.
- 2020 *Torsion points of abelian varieties and F -isocrystals* (webinar), MPIM, Bonn, Germany.
- 2019 *Minimal slope and parabolicity conjecture of F -isocrystals*, University of Bonn, Germany.
- 2018 *Finiteness of perfect torsion points of an abelian variety*, Free University Berlin, Germany.
- 2017 *Lisse sheaves and overconvergent isocrystals* (3 talks), Free University Berlin, Germany.

Teaching, seminars, and other activities

CONFERENCES AND WORKSHOPS ORGANIZED

- 2024 *Arithmetic geometry, a conference in honor of Hélène Esnault, on the occasion of her 70th birthday* (co-organized with Rülling and Srivastava), Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France.
- 2023 *PrisMiPd, a prismatic workshop* (co-organized with Vezzani and Mazzari), University of Milan and University of Padua, Italy.

SEMINARS ORGANIZED

- 2025-
2018 *Séminaire arithmétique et géométrie algébrique*, IRMA, Strasbourg.
Student seminar on Abhyankar's conjectures (co-organized with Marcin Lara), Free University Berlin, Germany.
- 2017 *Algebraic Geometry and Number Theory Seminar*, Free University Berlin, Germany.
- 2017 *Research seminar on the Langlands correspondence for function fields* (co-organized with Michael Gröchenig and Raju Krishnamoorthy), Free University Berlin, Germany.
- 2015 *Seminar on Brauer Manin Obstruction and Colliot-Thélène Sansuc descent theory* (co-organized with Emiliano Ambrosi, Gregorio Baldi and Marcin Lara), University Paris Sud, France.
- 2015 *Séminaire d'Arithmétique et de Géométrie Algébrique jeune*, University Paris Sud, France.

TEACHING

- 2025 *Linear Algebra MPA S2 & S4* (10 hours), Bachelor, University of Strasbourg, France.
- 2024 *Linear Algebra MPA S2 & S4* (26 hours), Bachelor, University of Strasbourg, France.
- 2018 *Number Theory II* (14 hours), Master, Free University Berlin, Germany.

PHD STUDENTS SUPERVISED

- 2024- *Moqing Chen*, Strasbourg University, France.
- 2024- *Livia Grammatica*, co-supervised with Anna Cadoret, Strasbourg University, France.

MASTER STUDENTS SUPERVISED

- 2023-2024 *Moqing Chen*, "Non-existence of abelian varieties over $\mathbb{Z}$ ", Paris Saclay University, France.
- 2023-2024 *Livia Grammatica*, "Comparison of flat and crystalline cohomology via quasisyntomic descent", Sorbonne University, France.
- 2020-2021 *Sjoerd Wijnand De Vries*, "The Tate conjecture for abelian varieties over finite fields", University of Bonn, Germany.

REFeree ACTIVITY

- 2023 PhD thesis of Emil Jacobsen, University of Zurich, Switzerland.
- Algebra & Number Theory, Compositio Mathematica, Duke Mathematical Journal, Journal of the European Mathematical Society, ...

REVIEWS

- 1 review for Zentralblatt MATH (zbMATH).

SEMINARS ATTENDED

- 2023- *Séminaire arithmétique et géométrie algébrique*, IRMA, Strasbourg.
- 2024 *Groupe de travail "Théorie de Hodge p -adique et la conjecture de Mumford-Tate"*, IRMA, Strasbourg.

2024	<i>Groupe de travail “La méthode de Lawrence-Venkatesh”, IRMA, Strasbourg.</i>
2021–2023	<i>Séminaire de théorie des nombres de l’IMJ-PRG, Jussieu, Paris.</i>
2021–2023	<i>Arithmetic Geometry Preprint Seminar, Jussieu, Paris.</i>
2019–2021	<i>Arithmetische Geometrie-Arbeitsgemeinschaft, University of Bonn.</i>
2021	<i>Arithmetische Geometrie-Oberseminar: p-adic modular forms, University of Bonn.</i>
2019	<i>Arithmetische Geometrie-Oberseminar: Prismatic Dieudonné theory, University of Bonn.</i>
2016–2019	<i>Guest seminar “Arithmetic Geometry”, FU Berlin.</i>
2018	<i>A New Proof of Mordell Conjecture, FU Berlin.</i>
2018	<i>Integral p-adic Hodge Theory, FU Berlin.</i>
2018	<i>De Rham epsilon factors à la Beilinson-Bloch-Esnault, FU Berlin.</i>
2017	<i>p-adic Simpson correspondence, FU Berlin.</i>
2017	<i>Formal geometry and deformation theory, FU Berlin.</i>
2017	<i>p-adic Hodge theory, FU Berlin.</i>
2017	<i>Faisceaux lisses et isocristaux, Jussieu, Paris.</i>
2016	<i>Berkovich spaces, birational geometry and motivic zeta functions, FU Berlin.</i>
2016	<i>Crystalline cohomology, FU Berlin.</i>
2016	<i>Motivic Galois groups and periods, FU Berlin.</i>
2016	<i>D-modules, FU Berlin.</i>

CONFERENCES & SCHOOLS

2024	<i>Rencontre ANR Cyclades, Strasbourg, France.</i>
2023	<i>Journée en l’honneur de Gilles Christol à l’occasion de ses 80 ans, Paris, France.</i>
2022	<i>Around p-adic cohomologies, Padua, Italy.</i>
2022	<i>Periods, Motives and Differential Equations: between Arithmetic and Geometry, Paris, France.</i>
2022	<i>Cohomology of Varieties, Warsaw, Poland.</i>
2019	<i>Over and around sites in characteristic p, in honor of Bernard Le Stum, Padua, Italy.</i>
2019	<i>Periods and Motives, Berlin, Germany.</i>
2019	<i>Arithmetic Geometry in Carthage, Carthage, Tunisia.</i>
2019	<i>Geometry and Arithmetic of Algebraic Varieties, Bonn, Germany.</i>
2019	<i>Workshop on Prismatic Cohomology, Essen, Germany.</i>
2019	<i>Women in Homotopy Theory and Algebraic Geometry II, Berlin, Germany.</i>
2019	<i>Arizona Winter School 2019: Topology and Arithmetic, Tucson, Arizona.</i>
2018	<i>Hodge theory of character varieties and the $P = W$ conjecture, Tatihou Island, France.</i>
2018	<i>Arithmetic and Algebraic Geometry - a conference in honor of Ofer Gabber, Paris, France.</i>
2018	<i>Crystals and Geometry in Characteristic p, Munich, Germany.</i>
2018	<i>Arizona Winter School 2018: Iwasawa Theory, Tucson, Arizona.</i>
2018	<i>Riemann-Hilbert correspondences, Padua, Italy.</i>
2017	<i>Period mappings from complex to p-adic, Tatihou Island, France.</i>
2017	<i>Curves and L-functions, Trieste, Italy.</i>
2017	<i>Motives for periods, Berlin, Germany.</i>
2017	<i>Abelian Varieties and Galois Actions, Poznań, Poland.</i>
2017	<i>Where Geometry meets Number Theory, Göteborg, Sweden.</i>
2017	<i>London-Paris Number Theory Seminar, London, England.</i>
2017	<i>Arizona Winter School 2017: Perfectoid Spaces, Tucson, Arizona.</i>

2016	<i>Motives and complex multiplication</i> , Ascona, Switzerland.
2016	<i>Satellite conference of 7ECM</i> , Hannover, Germany.
2016	<i>Shimura varieties</i> , Leiden, Netherlands.
2016	<i>Arakelov theory and automorphic forms</i> , Berlin, Germany.
2016	<i>Fundamental groups in arithmetic geometry</i> , Paris, France.
2016	<i>Day of algebraic and arithmetic geometry</i> , Berlin, Germany.
2016	<i>Séminaire Grothendieck</i> , Paris, France.
2016	<i>Algebraic geometry - a conference in honour of Arthur Ogus</i> , Paris, France.
2015	<i>Geometry of algebraic varieties</i> , Berlin, Germany.
2015	<i>Moduli spaces and automorphic forms</i> , Siena, Italy.
2015	<i>Topological K-theory and applications</i> , Strasbourg, France.

Languages

Italian : First language.

English : Fluent.

French : Fluent.

German : Intermediate.

Russian : Basic.