Curriculum Vitae

September 25, 2025

Personal Information

- Emiliano Ambrosi, Italian, 31/01/1992, Milan;
- Mail: eambrosi@unistra.fr;
- Web page: `http://emiliano.ambrosi.perso.math.cnrs.fr`.
- Office 207, IRMA, 7 rue René Descartes, 67084 Strasbourg (France).

Employment

2020- Maître de conférences at Institut de Recherche Mathématique Avancé (IRMA), Strasbourg;

2019-2020 Post-doc at Max Planck Institute for Mathematics (MPIM), Bonn.

Education

`Career`

2016-2019 Ph.D. in Mathematics, École Polytechnique, Paris;

2015–2016 Erasmus, University of Paris Sud, Master 2 'Analyse, Arithmétique et Géométrie', Orsay, France;

2014–2016 Master in Mathematics, University of Milan, Italy, *110/110 cum laude*;

2013–2014 Electronic Music Composition, Scuola Civica di Musica, Milan, Italy;

2011–2013 Music Composition, Scuola Civica di Musica, Milan, Italy;

2011–2014 Bachelor in Mathematics, University of Milan, Italy.

`Theses`

- Ph.D. Thesis: *ℓ-adic, p-adic and geometric invariants in families of varieties*; defended on 18/06/2019 in front of Hélène Esnault (president), Yves André (referee), Anna Cadoret (advisor), François Charles, Javier Fresán, Moritz Kerz (referee);
- Master Thesis: *The Tate conjectures for abelian varieties after Tate, Zarhin, Mori, Faltings*; under the supervision of Anna Cadoret and Fabrizio Andreatta;

- Bachelor Thesis: *Galois theory of Grothendieck*, under the supervision of Fabrizio Andreatta.

Publications

- *Reduction modulo p of the Noether's problem*, à paraître dans **Algebra and Number Theory** (joint with Domenico Valloni)
- *Geometrically simple counterexamples to a local-global principle for quadratic twists*, **Mathematische Zeitschrift** Vol. 311, No. 64, 2025. (joint with N. Coppola et F. Fité)
- *Specialization of Néron-Severi groups in positive characteristic*, **Annales scientifiques de l'école normale supérieure**, Vol 56, No. 3 pp. 665-711, 2023
- *Perfect points of abelian varieties* **Compositio Mathematica**, Vol. 159, No. 11, pp. 2261-2278, 2023 ;
- *Maximal tori of monodromy groups of F-isocrystals and an application to abelian varities* (joint with Marco D'Addezio), **Algebraic Geometry**, Vol. 9, No. 2, pp. 633-650, 2022.
- *Uniform boundedness of Brauer groups of forms in positive characteristic*, **Mathematical Research Letters**, Vol. 28, No. 2, pp. 315-329, 2021.
- *A note on the behaviour of the Tate conjecture under finitely generated field extensions*, **Pure and Applied Mathematics Quarterly**, Vol. 14, No. 3-4, pp. 515-527, 2018.

Preprints (available on arXiv)

- *Wild Brauer classes via prismatic cohomology* (joint with Rachel Newton and Margherita Pagano)
- *On the topology of real algebraic stacks* (joint with Olivier de Gaay Fortman)
- *Topological groupoids with involution and real algebraic stacks* (joint with Olivier de Gaay Fortman)
- *An Artin-Mumford criterion for conic bundles in characteristic two* (joint with Giuseppe Ancona)
- *Betti numbers of real semistable degenerations via real logarithmic geometry* (joint with Matilde Manzaroli);
- *A uniform open image theorem for ℓ-adic representations in positive characteristic.*

Visiting

- Università di Genova, Host: M. Penegini, 2026 (one semester)
- King's College (London), Host: R. Newton, 04/25 (one week)
- Utrecht University, Host: O. de Gaay Fortman, 9/2024 (one week)
- Université de Nantes, Host : E. Brugallé, 02/2023 (one week)
- CAS (Oslo), Host : K. Shaw, 09/2022 (one week)
- University of Tokyo, Host : A. Shiho, 03/2019 (two weeks)
- RIMS (Kyoto), Host : A. Tamagawa, 08/2018 (one month)
- RIMS (Kyoto), Host : A. Tamagawa, 08/2017 (two weeks)
- IMPU (Tokyo), Host : T. Abe, 08/2017 (two weeks)

Post-doc supervision

- Haohao Liu (09/2024-08/2026, founded by the scholarship IDEX of Strasbourg)
- Nirvana Coppola (03/2024-12/2024, founded by ANR Cyclades)

Participation in research groups:

- 2023-2027, member of the ANR Cyclades: Algebraic cycles and periods (coordinator: Olivier Benoist).

Community service

- Refereeing:
  - *Compositio Mathematica*
  - *Épiga*
  - *Proceedings of the American Mathematical Society*
  - *International Journal of Number theory*
  - *Algebraic Geometry*
  - *Journal of Pure and Applied Algebra*
- Reviewing:
  - *Zbmath.*

Organisation of conferences:

- 2026 :
  - Curves, Abelian VArieties, and RElated Topics, second edition, july 2026 (co-organized with Giuseppe Ancona, Francesc Fité et Xevi Guitart)
  - JAVA conference 2026, juin 2026 (co-organized with Giuseppe Ancona, Olivier de Gaay Fortman, Dragoş Frăţilă, Mattia Cavicchi, Marco Maculan)
- 2025 :
  - JAVA conference 2025, juin 2025 (co-organized with Giuseppe Ancona, Olivier de Gaay Fortman, Dragoş Frăţilă, Mattia Cavicchi, Marco Maculan)
- 2024 :
  - Curves, Abelian VArieties, and RElated Topics, 17-21 June 2024 (co-organized with Giuseppe Ancona, Francesc Fité et Xevi Guitart);
  - JAVA conference 2024, july 2024 (co-organized with with Giuseppe Ancona, Mattia Cavicchi et Marco Maculan).

Research activities

`As speaker in research seminars`

- *Un critére d'Artin et Mumford en caractéristique 2* Séminaire LAGA, Paris, 12/2024
- *Un critére d'Artin et Mumford en caractéristique 2*, Séminaire variétés rationnelles, Paris, 11/2024
- *Reduction modulo p of the Noether's problem*, Algebra and Geometry seminar, Genova, 10/2024
- *Reduction modulo p of the Noether's problem*, Utrecht Geometry seminar, Utrecht, 9/2024
- *Reduction modulo p of the Noether's problem*, London Number Theory seminar, London, 12/2023
- *Riduzione modulo p del problema di Noether*, Seminario di Algebra e Geometria, Sapienza, Rome, 06/2023;
- *Reduction modulo p of the Noether's problem*, Séminaire de théorie des nombres de l'IMJ-PRG, Paris, 12/2022;
- *Reduction modulo p of the Noether's problem* Research Seminar Algebraic Geometry, Hannover, 11/2022 ;
- *Real Betti numbers of real semistable degenerations*, CAS, Oslo, 09/2022;

- *Overconvergence of the Dieudonné module of a semiabelian scheme*, Séminaire 'Arithmétique et géométrie algébrique', IRMA, Strasbourg, 10/2021;
- *Perfect points of abelian varieties*, Séminaire de géométrie arithmétique, Rennes, 4/2021;
- *Perfect points of abelian varieties*, 2/2021;
- *Perfect points of abelian varieties*, Séminaire de théorie des nombres de l'IMJ-PRG, Paris, 10/2020;
- *Perfect points of abelian varieties*, Séminaire 'Arithmétique et géométrie algébrique', IRMA, Strasbourg, 09/2020;
- *Perfect points of abelian varieties*, Seminar on Algebra, Geometry and Physics, Bonn (MPIM), 07/2020;
- *Torsion points of abelian varieties and F-isocrystals*, Mittagsseminar zur Arithmetik, Münster, 11/2019;
- *p-torsion of abelian varieties and monodromy groups of (over)convergent F-isocrystals*, Séminaires de Géométrie Arithmétique et Motivique, Paris 13, 02/2019;
- *Uniform bound of Brauer groups of forms in positive characteristic*, Séminaires Variétés rationnelles, Paris, 01/2019;
- *Specialization of Néron-Severi groups in positive characteristic*, Séminaire 'Arithmétique et géométrie algébrique', IRMA, Strasbourg, 01/2019;
- *Specialization of Néron-Severi groups in positive characteristic*, Guest seminar 'Arithmetic Geometry', Berlin, 06/2018;
- *Specialization of Néron-Severi groups in positive characteristic*, Séminaire Autour des cycles algébriques, Paris, 05/2018;
- *Monodromy groups and specializations of cohomological cycles*, Doctoral seminars, Milan, 05/2017;
- *Uniform boundedness of ℓ-primary torsion of Brauer group in one dimensional families*, Working group on K3 surfaces, London (Imperial college), 02/2017;

`As speaker in conferences:`

- *On the topology of real algebraic stacks*, Real Algebraic geometry and interactions, Nice, 08/2025
- *An Artin-Mumford criterion in characteristic 2*, Arithmetic geometry of K3 surfaces, Lausanne, 05/2025
- *Riduzione modulo p del problema di Noether*, Giornate di Geometria Algebrica ed Argomenti Correlati XVI, Cetraro, 09/2023
- *Perfect points of abelian varieties*, Number Theory in Montserrat 2023, Montserrat, 06/2023

- *Reduction modulo p of the Noether's problem*, ANR Pergamo final conference, 03/2023
- *Perfect points of abelian varieties*, Luxembourg Number Theory Day, 12/2021
- *Perfect points of abelian varieties*, Skorobogatov 60 Conférence, en l'honneur d'Alexei N. Skorobogatov, Paris, 11/21
- *Torsion points of abelian varieties and F-isocrystals*, Arithmetic of connections, Monte Veritá, 07/2019
- *Monodromy groups of convergent isocrystals and applications*, p-adic cohomology and arithmetic geometry, Sendai, 11/2018
- *An explicit bound for the ℓ-primary torsion in one dimensional families of abelian varieties in positive characteristic*, Explicit and computational approaches to Galois representations, Luxembourg, 07/2018
- *Specialization of Néron-Severi groups in positive characteristic*, Workshop K3 surfaces and Galois representations, Shepperton, 05/2018
- *Specialization of representations of the étale fundamental group and specialization of cohomological cycles*, short talk (15 minutes), Where geometry meets number theory, Gothenburg, 07/2017

`Working groups`

- *Mumford-Tate conjecture and p-adic Hodge theory*, organiser (2024/25)
- *The Lawrence-Venkatesh method* (2024)
- *Hodge theory for morphisms* (2023)
- *Work of Yun* (2022/2023)
- *Essential dimension via prismatic cohomology*, organiser (2022)
- *The tight approximation property* (2021)
- *Relévements modulo p^2 et décomposition du complexe de de-Rham*, organiser, (2020)
- *Smooth and proper schemes over $\mathbb{Z}$* (2020)
- *Prismatic Dieudonné Theory* (2019);
- *Canonical and integral models of Shimura varieties* (2017), organizer
- *Lisse sheaves and isocrystals: finiteness and companions* (2017)
- *Kuga-Satake construction and the Weil conjectures for K3 surfaces* (2017), organizer
- *Honda-Tate theory* (2016)
- *Algebraic groups* (2016)

- *Resolution of singularities* (2016)
- *Brauer Manin Obstruction and Colliot-Thélène Sansuc descent theory* (2015)
- A first glance at Stacks Theory (2015)

`Others mathematical talks :`

- *Essential dimension via prismatic cohomology*, Arithmetic geometry preprint seminar, Paris, 06/2023
- *Boundary complex of M_g and its cellular homology*, JAVA conference, Tatihou's island, 08/2021
- *Coherent cohomology and base change*, Ph.D. seminar, Strasbourg (IRMA), 04/2021
- *Geometry and arithmetic in families of varieties*, Oberseminar, Bonn (MPIM), 10/2019
- *Specialization of arithmetic and cohomological invariants in positive characteristic*, Séminaires Math Jeunes, Paris, 03/2019
- *Specialization of representations of the étale fundamental group and applications*, Seminar Réga, Paris, 11/2017
- *Specialization of representations of the étale fundamental group and applications*, Junior Number Theory Seminar, London (UCL), 02/2017
- *Linear System on K3 surfaces*, Milan, 07/2015
- *Galois theory for ètale morphism*, Milan, 07/2015

`Conferences attended`

- *Period maps: classical and p-adic*, Cargese, 9/2025
- *Around p-adic cohomologies*, Padova, 09/2023
- *2nd JNT Biennial Conference*, Cetraro, 07/2022
- *Skorobogatov 60*, Conférence en l'honneur d'Alexei N. Skorobogatov, Paris, 11/2021
- *JAVA conference*, Tatihou's island, 09/2021
- *Arithmetic of Shimura varieties over global fields*, Cetraro, 08/2021
- *1st JNT Biennial Conference*, Cetraro, 07/2019
- *Arithmetic of Connections*, Monte Veritá, 07/2019
- *Arithmetic Geometry: ℓ-adic and p-adic aspects*, Tokyo, 09/2018
- *Arithmetic and Algebraic Geometry*, Bures-sur-Yvette, 06/2018

- *Summer School: Explicit and computational approaches to Galois representations*, Luxembourg, 07/2018
- *K3 surfaces and Galois representations*, Shepperton, 05/2018;
- *Crystals and geometry*, Munich, 04/2018
- *Winter school: Riemann-Hilbert correspondences*, Padova, 02/2018
- *Conference on Algebraic Geometry and Number Theory on the occasion of Jean-Louis Colliot-Thélène's 70th birthday*, Firenze, 12/2017
- *Abelian varieties and Galois actions*, Poznan, 07/2017
- *Where geometry meets number theory*, Gothenburg, 07/2017
- *Arizona Summer school: Perfectoid spaces*, Tucson, 03/2017
- *3rd Workshop on Interactions between Arithmetic and Homotopy*, London, 02/2017
- *London-Paris Number Theory Seminars on Perfectoid spaces*, Paris, 11/2016
- *Summer school: Fundamental groups in arithmetic geometry*, Paris, 05/2016
- *Séminaire Grothendieck 2016*, Paris, 03/2016
- *Summer school on Derived algebraic geometry*, Pavia, 09/2015
- *Summer school on Perfectoid Spaces*, Bressanone, 08/2015
- *A categorical day in Turin*, Turin, 04/2015
- *Séminaire Grothendieck 2015* , Milan, 03/2015

Scientific responsabilities :

- 2025-2026
  - Organiser of the summer school JAVA 2026
  - Organiser of the conference CAVARET 2
- 2024-2025 :
  - Organiser of the weekly seminar Arithmétique et géométrie algébrique in Strasbourg
  - Organiser of the summer school JAVA 2025
  - Organiser of the working groups in Strasbourg
- 2023-2024 :
  - Organiser of the weekly seminar Arithmétique et géométrie algébrique in Strasbourg
  - Organiser of the summer school JAVA 2024
  - Organiser of the conference CAVARET

  - Organiser of the working groups in Strasbourg

- 2022-2023 :
  - Organiser of the weekly seminar Arithmétique et géométrie algébrique in Strasbourg
  - Organiser of the working groups in Strasbourg

- 2021-2022:
  - Responsable of Algèbre S1 (around 300 students).

Teaching

`Courses`

- 2025-2026
  - Algèbre S1 (35 hours)
  - Algèbre S1 MPA (45 hours)

- 2024-2025
  - Algèbre S4 MPA (60 hours)

- 2023-2024
  - Master course : Abelian varieties Variété abéliennes (25 hours)
  - Algèbre S2 (52 hours)
  - Algèbre S4 MPA (60 hours)

- 2022-2023
  - Algèbre S4 MPA (60 hours)

- 2021-2022:
  - Algèbre S1 (35 hours)
  - Algèbre S4 MPA (60 hours)

- 2020-2021:
  - Mathématiques élémentaires S1 (26 hours)
  - Algèbre S1 (35 hours)
  - Algèbre S4 (20 hours)

`Supervision of stages`

- 2023-2024:
  - Unirational but not rational varieties, Pierre Sarre (6 weeks, M1, ENS Rennes)
  - Finiteness of the class group, Pierre Schimdt (6 weeks, L3, ENS Lyon)

- 2022-2023:
  - de-Rham theorem, Théophile Cailliau (6 weeks, M1, ENS Lyon).

Theses supervised

- 2024-2025:
  - Hensel's Lemma (Azad Baksi, M2 Agrégation)
  - Fundamental group (Bettali Loïc, L3 Magistère)
- 2023-2024:
  - Quadratic reciprocity (Moreau Théophile, M2 Agrégation)
  - Bezout Theorem (Lohezic Augustin, L3 Magistère)
- 2022-2023:
  - Quadratic reciprocity (Moreau Théophile, Mémoire M2 Agrégation)
  - Gauss Sum (Rios Matthieu, L3 Magistère)
- 2021-2022:
  - Ostrowski's Theorem (Hugo Moreno, Mémoire M2 Agrégation)
  - The Hasse-Minkowski Theorem (Rios Matthieu, L3 Magistère)
- 2020-2021:
  - Sum of squares (Gless Timothée, M2 Agrégation)
  - An algebraic proof of the finiteness of the class number (Moreau Théophile, L3 Magistère)

Research courses

- *p-adic cohomology theories with a view toward ℓ-adic applications*, Number Theory/Arithmetic Geometry Seminars, Kyoto (RIMS), 24,28 August and 1 September, 2017, 9 hours

Grants

- Prime individuelle (RIPEC) (2024-2028), 10k euros
- Max Planck Institute for Mathematics Postdoctoral Fellowship (October 2019 - September 2021)
- EDMH Fellowship with Monge Hat (October 2016 - September 2019)

Miscellaneous

- *An algebraic geometry view on classical number theory*;
- Activities as math tutor for student of High school and first years of Bachelor;
- Computer skills: Word, C, Latex, Magma.

`Languages`

- Italian: Mother tongue;
- English: Fluent;
- French: Fluent;
- German: Basic.