

Pierre Morain

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Education

Sorbonne Université, Paris, France (September 2023 – August 2026)
PhD in Pure Mathematics, specialty in Number Theory.
Advisors: Pierre Charollois and Antonin Guilloux.

Sorbonne Université, Paris, France (Septembre 2022 – August 2023)
M2 Mathématiques Fondamentales. Mention: très bien.

École polytechnique, Palaiseau, France (September 2019 – August 2023)
Engineer studies with a specialty in pure mathematics.
Diplôme de l'École polytechnique (2023), Diplôme d'ingénieur (2022).

Lycée Saint-Louis, Paris, France (September 2017 – August 2019)
Classe préparatoire MPSI/MP*.
Preparation for French Engineering schools contests.

Gustave Eiffel, Cachan, France (September 2014 – August 2017)
Baccalauréat S, spécialité mathématiques. Mention: très bien et félicitations du jury.

Research stays

IMJ-PRG, Sorbonne Université, Paris, France (February 2023 – July 2023)
Master thesis: *Multiple elliptic gamma functions and Eisenstein series*.
Advisor: Pierre Charollois.

LmB, Université Marie et Louis Pasteur, Besançon, France (March 2022 – July 2022)
M1 Research stay: *Arithmétique des corps cyclotomiques et théorie d'Iwasawa*.
Advisor: Olivier Fouquet. Félicitations de l'École polytechnique.

CMLS, École polytechnique (December 2021 – March 2022)
Study of Class field theory following *Primes of the form x^2+ny^2* , Cox D.
Advisor: Diego Izquierdo.

CMLS, École polytechnique (September 2021 – November 2021)
Study of Hopf algebras following *Representations of Finite Classical Groups*, Zelevinsky A.
Advisor: David Renard.

Publications

Geometric families of multiple elliptic Gamma functions and arithmetic applications, I. (2025)
Submitted, available at <https://arxiv.org/abs/2510.16515>.

Work in preparation, working papers

Geometric families of multiple elliptic Gamma functions and arithmetic applications, II.
Expected 2026.

Geometric families of multiple elliptic Gamma functions and arithmetic applications, III.
Expected 2026.

Elliptic units above fields with exactly one complex place (2024).
Working paper available at <https://arxiv.org/abs/2406.06094>.

Teaching experience

Teaching Assistant at École polytechnique (September 2023 – August 2026)
-Teaching Assistant for the course in Complex Analysis (MAA313 then FMA_3F013).
3 years, in English.
-Tutoring for the course in Functional Analysis (FMA_43052) in 2026.

Talks in international conferences

Hilbert's 12th problem for number fields with exactly one complex place.
33èmes Journées Arithmétiques, Université du Luxembourg, Luxembourg, July 2025.

Elliptic units above fields with exactly one complex place.
Recent progress on Hilbert's 12th problem, ICMS, Edinburgh, June 2024.

Seminar talks

Stark units above number fields with exactly one complex place.
Stark-SIC seminar, Online seminar, November 2025.

Algebraic specialisations of multiple elliptic Gamma functions.
Équations différentielles motiviques et au-delà, Institut Henri Poincaré, Paris, January 2025.

Stark units and elliptic Gamma functions.
22nd Atelier PARI/GP 2025, Institut Pascal, Orsay, January 2025.

Conferences attended

Arithmetic cycles, Modular forms, and L-functions (in honour of Henri Darmon's 60th birthday).
CRM, Université de Montréal, August 2025.

33èmes Journées Arithmétiques, Université du Luxembourg, Luxembourg, July 2025.

22nd Atelier PARI/GP 2025, Institut Pascal, Orsay, January 2025.

Recent progress on Hilbert's 12th problem, ICMS, Edinburgh, June 2024.

Modular Forms, L-functions, and Eigenvarieties (in memory of Joël Bellaïche).
ENS Ulm, Paris, June 2024.

Eisenstein days, University College London, London, December 2023.

A Conference in Arithmetic Algebraic Geometry in Memory of Jan Nekovář.
IHES, Bures-sur-Yvettes, October 2023.

Foundations of Computational Mathematics (FoCM).
Sorbonne Université, Paris, June 2023.

Languages

French (native), English (fluent), German (intermediate), Russian (basic).