

Samuel Le Fourn

PhD in Pure Mathematics

ENS de Lyon

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Born July 18 1990, French nationality

Research interests

- Galois representations on torsion points of abelian varieties (uniformity problems)
- Rational or integral points on modular curves and modular space (diophantine methods)
- Nonvanishing of central values of modular L -functions
- Theta functions and Siegel modular spaces.

Current activity

since sep. 2014 “**Agrégé préparateur**”, *ENS de Lyon*.

Teaching position specifically in ENS for preparation to the national competitive teaching exam “Agrégation de mathématiques”

Articles

- Surjectivity of Galois representations associated with quadratic \mathbb{Q} -curves, *Math. Ann.*, 2015, <http://dx.doi.org/10.1007/s00208-015-1269-x>
- Nonvanishing of central values of L -functions of newforms in $S_2(\Gamma_0(dp^2))$ twisted by quadratic characters, *Canad. Math. Bull.*, 2017, <http://dx.doi.org/10.4153/CMB-2016-085-6>
- Sur la méthode de Runge et les points entiers de certaines variétés modulaires de Siegel, *C. R. Ac. Sci.*, 2017, <https://doi.org/10.1016/j.crma.2017.07.004>.
- A “tubular” variant of Runge’s method in all dimensions, with applications to integral points on Siegel modular varieties (submitted), [arXiv:1611.09054](https://arxiv.org/abs/1611.09054).

Invited talks in Seminars, Conferences and Workshops

- jul. 2017 **Banff International Research Station, Banff.**
“Diophantine Approximation and Algebraic Curves workshop” organised by Michael Bennett, Aaron Levin and Jeff Thunder
- apr. 2017 **Institut d’Estudis Catalans, Barcelona.**
Barcelona Mathematical Days, number theory thematic session organised by Luis Dieulefait and Nuno Freitas
- mar. 2017 **Université de Caen Normandie, Caen.**
Number theory seminar
- jun. 2016 **Université de Clermont-Ferrand, Clermont-Ferrand.**
EJCTN 2016 at Clermont
- feb. 2016 **Institut Joseph Fourier, Grenoble.**
Arithmetics seminar
- nov. 2015 **Université de Franche-Comté, Besançon.**
Number theory seminar of Besançon
- oct. 2015 **Universé de Clermont-Ferrand, Clermont-Ferrand.**
Joint arithmetics conference between Clermont and Lyon, organised by Nicolas Billerey
- feb. 2015 **ENS de Lyon, Lyon.**
Arithmetics seminar ICJ-UMPA
- may 2014 **CIRM, Luminy.**
Conference “Heights, modularity and transcendence” organised by Vincent Bosser, Nicolas Ratazzi and Tanguy Rivoal
- oct. 2013 **Université de Franche-Comté, Besançon.**
Conference “Méthodes diophantiennes” organized by Aurélien Galateau

- oct.2013 **Université Bordeaux 1, Bordeaux.**
Workshop "Conjecture de Mordell : Faltings et Vojta-Bombieri" organized by Pierre Parent and Fabien Pazuki
- may 2013 **University of Illinois at Chicago, Chicago.**
Workshop CEDAR organized by Alina Cojocaru
- mar. 2013 **Université de Clermont-Ferrand, Clermont-Ferrand.**
Weekly number theory workshop organized by Marusia Rebolledo
- feb. 2013 **Université Paris VI, Paris.**
Weekly number theory seminar in Jussieu organized by Pierre Colmez, Mathilde Herblot and Guillaume Maurin

Education

- 2011–2015 **PhD student in Number Theory, Université de Bordeaux.**
under the direction of Pierre Parent, obtained November 20th 2015, with title "Integral and rational points of modular curves and higher-dimensional varieties, funded by a state scholarship"
- 2011 **Masters Degree Internship - 3 months, University McGill, Montreal.**
Under the direction of Henri Darmon : "On the surjectivity of Galois representations of \mathbb{Q} -curves"
- 2007–2011 **Student in Fundamental Mathematics, ENS de Lyon, Lyon.**
Masters Degree in Number Theory obtained in 2011 with highest honours
- july 2010 **Obtainment of "Agrégation de mathématiques" (ranked second).**
This is a French national competitive exam to recruit teachers
- 2008 **Obtainment of License in Mathematics, Université Lyon 1, Lyon.**

Teaching Experience

I have 6 years of teaching experience, including 3 years to end of license or master level in mathematics at the ENS de Lyon. For most of the courses and tutorials mentioned below, I autonomously decided the exercices, syllabus and grading (for courses).

- 2014– **"Préparation à l'agrégation", ENS de Lyon, Lyon.**
Algebra course, and mock written and oral exams for the "agrégation"
- 2014– **First-year of Master of Mathematics, ENS de Lyon, Lyon.**
Tutorials in number theory
- 2014– **Third-year Mathematics, ENS de Lyon, Lyon.**
Tutorials in first-semester algebra
- 2013–2014 **First-year Mathematics, Université Bordeaux 1, Bordeaux.**
Fundamentals of logic, set theory and arithmetics
- 2012–2014 **First-year Biology, Université Bordeaux 1, Bordeaux.**
Matrices, linear systems and basics of analysis
- 2012–2013 **First-year Mathematics, Université Bordeaux 1, Bordeaux.**
Tutorials in fundamentals of linear algebra and polynomials
- 2011-2012 **First-year Biology, Université Bordeaux 1, Bordeaux.**
Reminders of high-school fundamentals of mathematics

Other activities and responsibilities

- since 2014 **Math α Lyon, one participation every year.**
Dissemination of mathematical knowledge by researchers in schools and high schools
- since 2015 **Conseil de Laboratoire de l'UMPA.**
Representative of the nonpermanent members
- since 2014 **Jury member for oral defence at ENS de Lyon.**
Eight times for third-year license students, twice for master students
- Refereeing and reviewing.**
Mathematica Scandinavica, Mathematical Reviews

Skills

Languages.

French (Mother tongue), English (fluent)

Programming.

LaTeX, a bit of Maple, Scilab and Sage