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Born 16/10/1981

French

Married, 1 child
(14 months old)

Current position: Maître de conférences at the University of Franche-Comté

Research interests

- Zeta-functions and L -functions (special values, behaviour in families, Brauer-Siegel type results, distribution of zeroes, M -functions)
- Applications of number theory and algebraic geometry to information theory (cryptography, error-correcting codes, sphere packings), particularly through (higher dimensional) class field theory.
- Arithmetic geometry (marked étale site, $K(\pi, 1)$ -property and applications)
- Algebraic geometry over finite fields (points on curves and varieties over finite fields, zeta-functions)
- Asymptotic theory of global fields and varieties (infinite global fields, limit zeta-functions)

Publications

- **On Generalised Mertens and Brauer–Siegel Theorems**, *Acta Arith.* 130 (2007), no. 4, 333 – 350.
- **On Tsfasman-Vlăduț Invariants of Infinite Global Fields**, *IJNT* 6 (2010), no.6, 1419 – 1448.
- **On Logarithmic Derivatives of Zeta Functions in Families, with Alexey Zykin**, *IJNT* 7 (2011), no.8, 2139 – 2156. Short version published in *Doklady Mathematics*, 2010, Volume 81, Number 2, 201–203.
Russian version: **Логарифмическая производная дзета функций в семействах глобальных полей**, *Доклады Академии Наук*, 2010, том 431, No 2, с. 162-164
- **Asymptotic methods in number theory and algebraic geometry, with Alexey Zykin**, *Pub. Math. de Besançon* 2011, 47-73.
- **On the cohomological dimension of some pro- p -extensions above the cyclotomic \mathbb{Z}_p -extension of a number field, with J. Blondeau and Ch. Maire**, *Mosc. Math. Journal* 13 (2013), no. 4, 601–619.
- **Quelques Résultats effectifs concernant les invariants de Tsfasman-Vlăduț**, *Annales de l’Institut Fourier*, 65 no. 1 (2015), 63-99.
- **Свойство $K(\pi, 1)$ для неособых отмеченных кривых над конечными полями, with A. Schmidt**, *Изв. РАН. Сер. матем.*, 2015, том 79, выпуск 5, страницы 193–200 (*Izvestia: Mathematics*)
english version: **The $K(\pi, 1)$ property for marked curves over Finite Fields** available here : <http://arxiv.org/abs/1401.1979>.
- **On the number of rational points of Jacobians over finite fields, with A. Zykin**, *Acta Arith.* 169 (2015), 373–384.

Work Experience

2014-2016	Part-time researcher at inria Saclay (coding theory and cryptography) and part-time MCF at University of Franche Comté
2012-2013	Researcher at the Poncelet Laboratory (CNRS Moscow)
2009–...	“Maître de conférences” at the University of Franche-Comté
2008–2009	“Research fellow” at the University of Nottingham
2007–2008	“Wissenschaftlicher Mitarbeiter” at the University of Regensburg
2004–2007	“Moniteur” at the University of Aix-Marseille 2.

Experience overseas

2014-2016	Many research stays at the Poncelet Laboratory, Moscow, Russia
2013-2014	Invited Professor (2 months) at HSE, Moscow
	Invited Researcher (3 months) at the IUM, Moscow
2012-2013	Researcher at the Poncelet Laboratory, Moscow (10 months)
2011-2012	Researcher stay (9 months, by Alexander Schmidt) at the University of Heidelberg, Germany
2008-2009	Postdoctoral stay (by Ivan Fesenko) at the University of Nottingham, England
2007-2008	Postdoctoral stay (by A. Schmidt) at the University of Regensburg, Germany
2005-2012	Numerous research stays (more than a year) at the Poncelet Laboratory in Moscow

Languages

French: native speaker
 English: C1
 German: C1
 Russian: B1 (and working knowledge)

Computer skills

- C++, Python, HTML, CSS
- LaTeX, Magma, Maple, Matlab, PARI/GP, SageMath

Education

2004–2007	Ph.D. “On Some Asymptotic Properties of Global Fields” under the direction of Michael Tsfasman, defended on May 16, 2007 in Marseille. <i>With highest honours.</i>
2000–2004	Studies at the “Ecole Normale Supérieure de Cachan”
2003–2004	Ph.D. studies. Widening of my mathematical knowledge in number theory and geometry.
2002–2003	“Agrégation de Mathématiques” , <i>teaching diploma.</i> Formal inscription in DEA
2001–2002	“DEA de Mathématiques pures” (5 year degree), University of Paris XI-Orsay. Specialization in number theory, algebraic geometry and information theory.
2001–2002	“Maîtrise de Mathématiques” (4 year degree), University of Paris VII and ENS Cachan.
2000–2001	“Licence de Mathématiques” (3 year degree), University of Paris VII and ENS Cachan.
1998–2000	“MPSI-MP*” (Higher Mathematics), Lycée Blaise Pascal-Orsay. “DEUG MIAS” (2 year degree), University of Paris XI-Orsay.

Others

- “Prime d’Excellence Scientifique” 2013–2017
- Member of the ANR Project: Global Berkovich Spaces (2013-2017)
- Other obtained fundings : RFFI, Dynasty, BQR, GDR, Parceco
- Project leader: asymptotic properties of curves and surfaces, Université of Franche-Comté (BQR 2011-2012)
- Referee for Journal de théorie des nombres de Bordeaux, Moscow Math. Journal, Journal of Number Theory, for the Publications Mathématiques de Besançon, and Ecos Sud.

Recent conference talks

12.2015	Arithmetic Geometry: Explicit Methods and Applications, Moscow: The $K(\pi, 1)$ -property and Tsfasman-Vladuts invariants for global fields
06.2015	Rencontres arithmétiques de Caen (June 2015), Propriétés asymptotiques des corps globaux
2006–2014	11 talks at international conferences

Recent seminar talks

10.2016	University of Heidelberg : Asymptotische Eigenschaften globaler Körper und Mannigfaltigkeiten
01.2016	University de Polynésie Française : Propriétés asymptotiques des corps globaux
04.2015	GTTN Clermont-Ferrand : Propriétés asymptotiques des corps globaux
04.2015	Globus seminar (Moscow) : Asymptotic properties of global fields
02.2015	STN Bordeaux : Propriétés asymptotiques des corps globaux
02.2015	GTATN Amiens : Comportement du nombre de classes: aspects analytiques et algébriques
11.2014	STN Caen : Propriétés asymptotiques des corps globaux
04.2014	GTBAC Paris : Propriétés asymptotiques des corps globaux
03.2014	GT Grace (Saclay) : Comportement du nombre de classes : aspects analytiques et algébriques
2006–2014	Numerous seminar talks in France, United Kingdom and Russia

Activities in the collective interest

- 2016–2017 Coorganizer of two international conferences : Zeta Functions 6 in Moscow (Dec. 2016) and Géométrie analytique et équations différentielles p -adiques in Luminy (March 2017)
- 2015–2016 Coorganizer of two international conferences : Arithmetic Geometry: Explicit Methods and Applications in Moscow (Dec. 2015) and Fundamental Groups in Arithmetic Geometry in Paris (May 2016)
- 2014–2015 Coorganizer of two international conferences: Non-archimedean analytic Geometry: Theory and Practice in Papeete (Aug. 2015), Zeta Functions 5 (Dec. 2014) in Moscow.
- 2013–2014 Coorganizer of two international conferences in Moscow: Global Fields (sept. 2013), Algebraic Geometry and Number Theory (juin 2014).
- 2012–2013 Organizer of a workshop on the Bogomolov conjecture, after Gubler.
Coorganizer with M. Hindry of the special year in arithmetic geometry at the Poncelet laboratory in Moscow, including a weekly seminar, minicourses, international conferences Global fields (Sept. 2013), Diophantine Geometry (May 2013) and Zeta Functions 4 (Nov. 2012)
<http://www.mccme.ru/poncelet/2013arithmyear/index.html>
- 2011–2012 Coorganizer of the conference Global Fields (Moscow, Oct. 2011)
- 2010–2011 Participation to a hiring comitee in Besançon.
- 2009–2012 Organizer of the number theory seminar of Besançon.

Editorial work

- 2017 Lecture notes of the summer school on Fundamental Groups, (co-editor with Christophe Delaunay), Publications Mathématiques de Besançon.
- 2016 Proceedings of the international conference Non-archimedean analytic Geometry: Theory and Practice (co-editor with Christophe Delaunay), Publications Mathématiques de Besançon.

TEACHING

Correspondence Courses

2015–...	Class field theory (5th year, Besançon)
2011–...	Commutative algebra (4th year, Besançon)
2010–2012	Integrals and series (2nd year, Besançon)

Courses

2015–2016	Algebra (3rd year, Tahiti)
2013–2014	Modules (4th year, Besançon) Global Fields and Error Correcting Codes (5th year, Moscow, mostly in English)
2012–2013	Class field theory (5th year, Moscow, mostly in English)
2010–2012	Polynomials and Linear Algebra (2nd year, Besançon)
2009–2012	General Algebra (5th year, dedicated to future highschool teachers, Besançon), Algebra for Agrégation (5th year, Besançon)

Exercices

2014–2015	Modules (4th year, Besançon)
2013–2014	Functions and sequences (1st year, Besançon) Algebra 2 (3rd year, Besançon) Mathematics for Biology (1st year, Besançon)
2009–2012	General Algebra (5th year, Besançon) Groups (3rd year, Besançon)
2009–2010	Analytic Geometry (2nd year, Besançon)
2007–2008	Algebra 1 and 2 (2nd year, Regensburg, in German)
2006–2007	Arithmetic (3rd year, Marseille)
2005–2006	Arithmetic (4th year, ingenior school, Marseille)
2004–2005	Functions (1st year, Marseille)

Seminars

2007–2008	Elementary number theory seminar (quadratic reciprocity law) for Lehramt students, Regensburg (in German)
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Supervision

2015–2016	Supervision of two Master 2 theses Supervision of one Master 1 thesis
2014–2015	Supervision of one Master 1 thesis
2009–2014	Supervision of three Master 2 theses Supervision of two Master 1 theses Supervision of three bachelor projects