

# Didier Lesesvre

Postdoctoral Fellow

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## Cursus Studiorum

- 2018 – 2021 **Postdoctoral fellowship**, Sun Yat-Sen University, Zhuhai, China.
- 2014 – 2018 **PhD in Mathematics**, advisor : Farrell Brumley, Université Paris 13.  
Arithmetic Statistics for Quaternion Algebras  
Jury : V. Blomer, F. Brumley, G. Chenevier, G. Harcos, P. Michel, J. Tilouine
- 2011 – 2014 **MSc in Mathematics**, ENS Cachan and UPMC.
- 2011 – 2017 **MA in History and Philosophy of Sciences**, Université Paris 7.
- 2012 – 2013 **Agrégation in Mathematics (ranked 10<sup>th</sup>)**.

## Long Research Stays

- 2017 – 2018 **Georg-August Universität, Göttingen**, 1 year.  
local advisor : Valentin Blomer  
funded by Deutscher Akademischer Austauschdienst (DAAD)
- Winter 16-17 **EPFL, Lausanne**, 4 months.  
local collaborators : Ian Petrow and Ernest Hunter Brooks  
funded by Fondation Sciences Mathématiques de Paris (FSMP)

## Articles

- Quadratic Twists of central values : the number field case.**  
with C. I. Kuan, preprint, 2020
- Sums of even ascending powers.**  
with C. I. Kuan and X. Xiao, submitted for publication, 2020
- The volumes of Miyauchi subgroups.**  
with I. Petrow, submitted for publication, 2019
- Low-lying zeros of L-functions for Quaternion Algebras .**  
submitted for publication, 2019
- Counting and Equidistribution for Quaternion Algebras .**  
*Mathematische Zeitschrift*, 2019, to appear
- Optimal Transportation with an Oscillation-Type Cost : 1D case.**  
with P. Pegon and F. Santambrogio. *Set-Valued and Var. Anal. J.*, 2013 (21) 541-556

## Pedagogy and teaching publications

- Pour un enseignement par la recherche..**  
*Repères IREM* 2020 (121), to appear
- Développement de mathématiques pour l'agrégation externe.**  
collaborative book for the French "Agrégation", Dunod 2020, to appear
- L'algèbre, ou l'école de la raison.**  
*Repères IREM*, 2013 (93) 5-36

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## Attended Conferences

- Fev 2020 **CIMPA School : Group Actions in Arithmetic and Geometry**, Indonésie.
- July 2019 **Symposium in Analytic Number Theory**, Cetraro, Italy.
- July 2019 **Journées Arithmétiques**, Istambul, Turkey.
- March 2019 **Value Distribution of Zeta and L-functions**, Riken, Tokyo.
- Dec 2018 **On The Langlands program : Endoscopy and beyond**, NUS, Singapore.
- August 2018 **Automorphic forms, L-functions and moments**, Nesin, Turkey.
- July 2018 **Building Bridges in Automorphic forms**, Alfréd Rényi Institute, Budapest.
- June 2018 **L-functions : Open Problems and Current Methods**, HCM, Bonn.
- March 2018 **Locally symmetric spaces**, IAS, Princeton.
- Sept 2017 **Automorphic Forms and Arithmetic**, MFO, Oberwolfach.
- July 2017 **Journées Arithmétiques**, Caen, France.
- Feb 2017 **Analytic Number Theory**, MSRI, Berkeley.
- June 2016 **EJCTN**, Université Blaise Pascal, Clermont-Ferrand, France.
- May 2016 **Relative Trace Formula, L-functions, Harmonic Analysis**, CIRM, Luminy.
- March 2016 **Geometrization and Algebraization of the Langlands Program**, Bristol.
- July 2015 **Quantum Ergodicity and Harmonic Analysis**, Marburg U, Germany.
- April 2015 **Analytic Aspects of Number Theory**, ETH, Zürich, Switzerland.
- July 2014 **Analytic Number Theory**, IHÉS, Bures-sur-Yvettes, France.
- August 2011 **Representation Theory and Complex Analysis**, SMI, Perugia, Italy.

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## Scientific Talks

- Dec 2019 **Number theory seminar**, Chinese University of Hong Kong, Hong Kong.  
Quadratic twists of central L-values for general number fields
- Nov 2019 **Number theory seminar**, Hong Kong University, Hong Kong.  
Arithmetic statistics for quaternion algebras
- Sept 2019 **Rencontres de Théorie Analytique des Nombres**, IHP, Paris, France.  
Quadratic twists of central L-values of automorphic representations
- Aug 2019 **Explicit Methods in Number Theory**, Harbin HIT, China.  
Counting and finding automorphis forms
- July 2019 **Journées Arithmétiques XXXI**, Instambul, Turkey.  
Quadratic twists of central L-values of automorphic representations
- May 2019 **Number Theory seminar**, Tsinghua University, Beijing, China.  
Quadratic twists of central L-values of automorphic representations
- Apr 2019 **Number Theory seminar**, Sun Yat-Sen University, Zhuhai, China.  
Quadratic twists of central L-values of automorphic representations
- Mar 2019 **Circle method workgroup**, Sun Yat-Sen University, Zhuhai, China.  
Various talks on the ascending power problem
- Dec 2018 **Number theory seminar**, Sun Yat-Sen University, Zhuhai, China.  
Relative and Kuznetsov trace formulas
- Nov 2018 **Number theory seminar**, Sun Yat-Sen University, Zhuhai, China.  
Low-lying zeros of L-functions
- Sep 2018 **Number theory seminar**, Sun Yat-Sen University, Zhuhai, China.  
Arithmetic Statistics for quaternion algebras

- Jul 2018 **EU/US Workshop, Budapest, Hungary.**  
Arithmetic Statistics for quaternion algebras
- Jul 2018 **Representations and Algebraic geometry seminar, Mainz University.**  
Plancherel and Sato-Tate for quaternion algebras
- Jun 2018 **Number theory seminar, Université Paris 13.**  
Type of symmetry of the quaternion algebras
- May 2018 **PhD Defense, Université Paris 13.**  
Arithmetic Statistics for quaternion algebras
- May 2018 **Number theory seminar, MPIM, Bonn.**  
Type of symmetry of the quaternion algebras
- Apr 2018 **Number Theory Oberseminar, Göttingen.**  
Low-lying zeros of L-functions
- Nov 2017 **Number Theory Oberseminar, Göttingen.**  
Arithmetic Statistics for quaternion algebras
- Nov 2017 **Number theory learning seminar, Göttingen.**  
Maass forms and spherical dual of  $SL_2(\mathbb{R})$
- Nov 2017 **Graduate seminar, Université Paris-Est.**  
Poincaré and its disk
- Oct 2017 **Number theory learning seminar, Göttingen.**  
First steps towards the coarse trace formula
- Oct 2017 **Junior Colloquium, Göttingen.**  
Modular forms and the sums of four square problem
- Sep 2017 **Number theory learning seminar, Göttingen.**  
Selection of the archimedean spectrum, following Duistermaat-Kolk-Varadarajan
- Jul 2017 **Journée Arithmétiques, Caen.**  
Type of symmetry of totally definite quaternion algebras
- May 2017 **Analytic Number Theory Workgroup, Institut Henri Poincaré, Paris.**  
Low-lying zeroes of L-functions
- May 2017 **Number Theory Workgroup, Université de Marseille, Luminy.**  
Trace formula through the modular surfaces
- Apr 2017 **Graduate Seminar, Université Paris 13.**  
The Linnik problem about sums of three squares
- Nov 2016 **Algebraic Geometry and Number Theory Seminar, EPFL, Lausanne.**  
Equidistribution of the universal family of quaternion algebras
- Oct 2016 **Analytic Number Theory Workgroup, IHP, Paris.**  
Symmetry type of algebraic groups
- Jun 2016 **Reading group on Iwaniec-Kowalski, IHP, Paris.**  
Modular and automorphic forms
- Jun 2016 **Doctoral School Day, Université Paris 13.**  
Groups, representations and the Langlands Program
- May 2016 **EJCTN, Université Blaise Pascal, Clermont-Ferrand.**  
Counting automorphic representations of totally definite quaternion algebras
- Apr 2016 **Junior seminar, Université Paris 13.**  
A swift tour of number theory, from elliptic curves to automorphic forms
- Mar 2016 **Reading group on Iwaniec-Kowalski, IHP, Paris.**  
Two lectures about sums of characters

- Feb 2016 **Analytic Number Theory Workgroup**, *Université Paris 11*.  
Two lectures on Sato-Tate conjectures for low-lying zeroes of zeta functions
- Jan 2016 **Junior seminar**, *Université d'Aix-Marseille*.  
Conductors and the automorphic representation counting problem
- Dec 2015 **Trace Formula Workgroup**, *UPMC, Paris*.  
Athur-Selberg Trace Formula and geometric orbital integral estimations
- Fall 2014 **Analytic Number Theory Workgroup**, *Université Paris 11*.  
Three lectures around covolumes of fuchsians groups and Tamagawa numbers
- Apr 2013 **High school scientific lecture**, *Lycées Mounier and Lakanal*.  
Cryptography, through history and arithmetics
- Mar 2012 **High school scientific lecture**, *Lycées Mounier and Camille Sée*.  
Theory of graphs and applications

## Teaching

- 2018 – 2020 **Khôlles in Mathematics**, *Sino-French Institute for Nuclear Energy (IFCEN)*.  
Weekly oral examination of CPGE's students (first & second years of university)
- 2018 – 2019 **Analytic Number Theory**, *Sino-French Insitute for Nuclear Energy*.  
Open lecture for the IFCEN teachers
- 2014 – 2017 **Teaching assistant**, *Université Paris 13*.  
3<sup>rd</sup> year (L3) : Differential Calculus and Optimization  
2<sup>nd</sup> year (L2) : Analysis, Linear Algebra, Arithmetic  
1<sup>st</sup> year (L1) : Analysis, Linear Algebra, Arithmetic, Mathematical Structures
- 2011 – 2014 **Khôlles in Mathematics**, *Lycées Lakanal and Louis-le-Grand*.  
Weekly oral examination of CPGE's students (first & second years of university)

## Responsibilities

- 2018 – 2020 **Organizer of the circle method workgroup**, *Sun Yat-Sen University*.
- 2017 – 2018 **Organizer of the number theory learning seminar**, *Göttingen*.
- 2016 – 2017 **Organizer of the graduate seminar**, *Université Paris 13*.
- 2015 – 2017 **Graduate representative at the LAGA Council**, *Université Paris 13*.
- 2015 – 2016 **Organizer of a workgroup on Iwaniec and Kowalski's book**, *IHP, Paris*.
- 2014 – 2016 **Graduate representative at the Doctoral School Council**, *Univ. Paris 13*.
- 2013 – 2014 **Students representative at the Scientific Council**, *ENS Cachan*.

## Philosophical Works

- Spring 2014 **Epistemological and ontological reflexions on definitions**.
- Winter 2013 **Historical study of Dedekind's *Vorlesungen über Zahlentheorie*, §27**.
- Winter 2012 **Philosophical reflexions on mathematical methods of proof**.
- Spring 2012 **Study on the work of Maximilien Winter**.
- Spring 2012 **How to think the periodisation of classical mathematics**.
- Sum. 2012 **The conception of Infinite according to Louis Couturat**.

## Associative Experience

- 2010 – 2018 **GICS (Groupe pour l'Initiative et la Culture Scientifiques)**, [www.gics.fr](http://www.gics.fr).  
Founder and President (2010-2017), then administration board member (2017-)  
Association aiming at promoting intellectual activity and science culture among high schools students, giving lectures on topics which are not presented at their level, and coordinating graduates, engineers and doctors in order to do so
- 2011 – 2013 **CAVE (Club des Amateurs de Vins de l'ENS)**, *Founder and President*.  
Wine tasting association unveiling the wine world among students of ENS Cachan

## Languages

<b>French, Brazilian</b>	native languages
<b>English, Spanish</b>	fluent
<b>Chinese</b>	learning (est. HSK 4)
<b>Italian, German</b>	elementary

## Further Interests

Go, philosophy, oenology, orthograph, photography, hiking