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## Research Interests

Arithmetic ( $p$ -adic) geometry:  $p$ -adic cohomologies,  $p$ -adic Hodge theory

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## Employment

- 2024 – now **Postdoctoral researcher in the research group of Vytautas Paškūnas**, *Universität Duisburg-Essen*, Essen, Germany
- 2023 – 2024 **Postdoctoral member of the IAS**, *Institute for Advanced Study*, Princeton, USA
- 2022 – 2023 **Postdoctoral researcher in the Arithmetic Geometry group of the MPIM**, *Max Planck Institute for Mathematics*, Bonn, Germany
- 2020 – 2022 **Postdoctoral researcher in the research group of Ana Caraiani**, *Imperial College*, London, UK

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## Formation

- 2017 – 2020 **PhD student under the supervision of Wiesława Nizioł**, *UMPA (ÉNS de Lyon)*, Lyon, France  
Subject:  $p$ -adic period morphisms and syntomic cohomology  
Jury: A. Abbes, D. Benois, L. Berger, K. Česnavičius, G. Dospinescu, M. Gros, A. Mézard, W. Nizioł
- 2017 – 2017 **Master thesis under the supervision of Wiesława Nizioł**, *UMPA (ÉNS de Lyon)*, Lyon, France  
Subject: Integral  $p$ -adic Hodge Theory
- 2015 – 2017 **Master degree in Mathematics**, *ÉNS de Lyon*, Lyon, France  
Arithmetic geometry
- 2014 – 2015 **Bachelor degree in Mathematics**, *ÉNS de Lyon*, Lyon, France
- 2011 – 2014 **Classes Préparatoires aux Grandes Écoles**, *Lycée Blaise Pascal/Lycée La Fayette*, Clermont-Ferrand, France  
Mathematics-Physics

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## (Pre)publications

- 2025 **Une conjecture  $C_{\text{st}}$  pour la cohomologie à support compact**, joint work with P. Colmez and W. Nizioł, Preprint, arxiv:2511.14675, 8 pages
- 2025 **Duality for  $p$ -adic geometric pro-étale cohomology**, joint work with P. Colmez and W. Nizioł, Preprint, arXiv:2411.12163, 43 pages
- 2025 **Compactly supported  $p$ -adic pro-étale cohomology of analytic varieties**, joint work with P. Achinger and W. Nizioł, Preprint, arXiv:2501.13651, 61 pages
- 2023 **On the  $v$ -Picard group of Stein spaces**, joint work with V. Ertl and W. Nizioł, *International Mathematics Research Notices*, Volume 2024, Issue 20, October 2024, 13352–13379
- 2023 **Arithmetic duality for  $p$ -adic proétale cohomology of analytic curves**, joint work with P. Colmez and W. Nizioł, Preprint, arXiv:2308.07712, 64 pages  
To appear in *Compositio Mathematica*
- 2021 **Morphismes de période et cohomologie syntomique**, *Algebra Number Theory* 17 (2023), 603–666

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## Paper in preparation

- ~2025 – 2026  **$\mathbb{G}_m$ -cohomology of Stein spaces**, joint work with D. Junger, in preparation, ~30 pages

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## Teaching

Lectures

- Spring 2026 **Algebraic Number Theory 4: Global class field theory**, *Universität Duisburg-Essen*, Essen, Germany  
For Master students
- Fall 2024 **Pro-étale cohomology**, *Universität Duisburg-Essen*, Essen, Germany  
Advanced course for Master and PhD students  
Exercise sessions
- Fall 2025 **Exercise sessions in Algebraic Number Theory 3: Cohomology of local fields**, *Universität Duisburg-Essen*, Essen, Germany  
For master students  
Lectures given by Vytautas Paškūnas
- Fall 2025 **Exercise sessions in Complex Geometry**, *Universität Duisburg-Essen*, Essen, Germany  
For master students  
Lectures given by Johannes Sprang
- Spring 2025 **Exercise sessions for the course "Smooth representation theory of  $p$ -adic groups"**, *Universität Duisburg-Essen*, Essen, Germany  
For master students  
Lectures given by Vytautas Paškūnas
- Fall 2024 **Exercise sessions for the course "Pro-étale cohomology"**, *Universität Duisburg-Essen*, Essen, Germany  
For master students  
Lectures given by myself
- Spring 2019 and 2020 **Exercise sessions in Number Theory**, *ÉNS de Lyon*, Lyon, France  
For master students  
Lectures given by Amaury Thuillier
- Fall 2018 and 2019 **Exercise sessions in Algebra 1**, *ÉNS de Lyon*, Lyon, France  
For undergraduate students  
Lectures given by Sandra Rozensztajn  
Learning seminars
- Spring 2025 **Learning seminar: Beilinson-Bernstein localization**, *Universität Duisburg-Essen*, Essen, Germany  
For master students
- Fall 2020 **Learning seminar: Higher Hida Theory**, *Imperial College*, London, UK  
For PhD students and researchers  
Others
- 2017 – 2018 **Oral examinations**, *ÉNS de Lyon*, Lyon, France  
Weekly oral exams for Bachelor students to train them for competitive exams
- 2016 – 2017 **Oral examinations**, *Lycée Aux Lazaristes*, Lyon, France

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### Thesis supervised

- 2025 – 2026 **Master thesis of Zhengqing He**  
Subject : Fundamental groups in rigid geometry
- 2024 – 2025 **Master thesis of Margherita Recchia**, *student of the ALGANT program*  
Subject : Hodge symmetry in  $p$ -adic geometry

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### Research talks in seminars and conferences

- June 2026 **Rencontres arithmétiques de Caen: " $p$ -adic and mod  $p$  aspects in Arithmetic Geometry"**, *LMNO*, Caen, France
- April 2026 **Seminar "Algebra and Number Theory"**, *Universität Wien*, Vienna, Austria  
" $G_m$ -cohomology of Stein spaces"
- March 2026 **Seminar "Représentations des Groupes Réductifs"**, *I2M*, Marseille, France  
" $G_m$ -cohomology of Stein spaces"
- December 2025 **Esaga RTG seminar**, *Universität Duisburg-Essen*, Essen, Germany  
" $G_m$ -cohomology of Stein spaces"
- December 2025 **Séminaire Arithmétique et Géométrie algébrique**, *IRMA*, Strasbourg, France  
" $G_m$ -cohomology of Stein spaces"
- March 2025 **Séminaire Arithmétique**, *Laboratoire Paul Painlevé*, Lille, France  
"Picard groups of Stein spaces"
- February 2025 **Séminaire de Théorie des Nombres**, *IMB*, Bordeaux, France  
"Picard groups of Stein spaces"

- February 2025 **Séminaire de Théorie des Nombres**, *LMB*, Besançon, France  
"Picard groups of Stein spaces"
- Janvier 2025 **Mini-conference "Arithmetic Day: Bonn - Essen - Münster"**, *Universität Duisburg-Essen*, Essen, Germany  
"On the  $v$ -Picard group of Stein spaces"
- April 2024 **Special Year Seminar**, *Institute for Advanced Study*, Princeton, US  
"On the  $v$ -Picard group of Stein spaces"
- March 2024 **Conference "Nearby cycles and derived geometry"**, *University of Regensburg*, Regensburg, Germany  
"Duality in  $p$ -adic geometry"
- February 2024 **Séminaire de Théorie des Nombres**, *LMNO*, Caen, France  
"On compactly supported  $p$ -adic pro-étale cohomology of analytic varieties"
- November 2023 **IAS/Princeton Arithmetic Geometry Seminar**, *Princeton University*, Princeton, US  
"Duality for  $p$ -adic pro-étale cohomology of Stein spaces"
- October 2023 **Essen Oberseminar**, *Universität Duisburg-Essen*, Essen, Germany  
"On compactly supported  $p$ -adic pro-étale cohomology of analytic varieties" (online talk)
- October 2023 **IAS short talks by postdoctoral members**, *Institute for Advanced Study*, Princeton, US  
" $p$ -adic Hodge theory for rigid analytic varieties"
- July 2023 **Trimester Seminar Series**, *HIM trimester program: "The Arithmetic of the Langlands Program"*, Bonn, Germany  
"On compactly supported  $p$ -adic pro-étale cohomology of analytic varieties"
- June 2023 **SFB "Higher invariants" Lecture**, *University of Regensburg*, Regensburg, Germany  
"Duality for  $p$ -adic pro-étale cohomology of Stein spaces"
- December 2022 **Oberseminar**, *Max Planck Institute*, Bonn, Germany  
"Investigating duality in  $p$ -adic geometry"
- November 2022 **Mittagsseminar zur Arithmetik**, *University of Münster*, Münster, Germany  
"Duality for  $p$ -adic pro-étale cohomology of Stein spaces"
- November 2022 **Number Theory Seminar**, *University of Cambridge*, Cambridge, UK  
"Duality for  $p$ -adic pro-étale cohomology of Stein spaces" (online talk)
- February 2022 **Number Theory Seminar**, *Imperial College*, London, UK  
"Investigating duality in  $p$ -adic geometry"
- April 2021 **Number Theory Seminar**, *UCLA*, Los Angeles, USA  
" $p$ -adic nearby cycles and syntomic cohomology" (online talk)
- March 2021 **Séminaire Arithmétique et Géométrie algébrique**, *IRMA*, Strasbourg, France  
" $p$ -adic nearby cycles and syntomic cohomology" (online talk)
- February 2021 **Number Theory Seminar**, *Warwick Mathematics Institute*, Warwick, UK  
" $p$ -adic nearby cycles and syntomic cohomology" (online talk)
- November 2020 **Paris London Number Theory seminar**, Paris, France  
" $p$ -adic nearby cycles and syntomic cohomology" (online talk)
- November 2020 **London Number Theory seminar**, London, UK  
" $p$ -adic nearby cycles and syntomic cohomology" (online talk)
- January 2020 **Séminaire des doctorantes et doctorants**, *Université Claude Bernard Lyon 1*, Lyon, France  
"What is  $p$ -adic Hodge theory?"
- October 2019 **Séminaire d'arithmétique de Lyon**, *Éns de Lyon*, Lyon, France  
" $p$ -adic nearby cycles and syntomic cohomology"
- November 2018 **Oberwolfach seminar "Syntomic cohomology and  $p$ -adic Hodge theory"**, *MFO*, Oberwolfach, Germany  
" $p$ -adic nearby cycles and  $\mathbb{A}_{\text{inf}}$ -cohomology"

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## Other activities

- 2020 – now **Referee activities**  
Journals: Documenta Mathematica, Forum of Mathematics Pi, Algebra & Number Theory, Canadian Mathematical Bulletin
- September 2023 **Co-organiser of the conference Young Number Theorists in Bonn**, *Max Planck Institute*, Bonn, Germany
- Fall 2020 **Co-organiser of the London Number Theory seminar**, *Imperial College of London*, London, UK

