

# Maxim Mornev

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Curriculum vitae, actual as of April 24, 2025.

## Contact details

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## Mailing address

(to appear)

## Research area

Number theory.

## Preprints and papers

(with Richard Pink) Local Kummer theory for Drinfeld modules. [arXiv:2402.08254](#).

Local monodromy of Drinfeld modules. *Compositio Mathematica* **160** (2024), no. 11, 2656–2683.

Tate modules of isocrystals and good reduction of Drinfeld modules. *Algebra & Number Theory* **15** (2021), no. 4, 909–970.

Shtuka cohomology and special values of Goss  $L$ -functions. [arXiv:1808.00839](#). This is my PhD thesis with minor updates.

Tannakian properties of unit Frobenius-modules. *Journal of Number Theory* **166** (2016), 19–30.

## Employment

2025 ICMAT, post-doc in the group of Daniel Macias.

2021 EPFL, SNSF Ambizione post-doc in the group of Maryna Viazovska.

2018 ETH Zürich, post-doc in the group of Richard Pink.

**Education**

- 2018 PhD, Universiteit Leiden, Università degli Studi di Milano.  
ALGANT program.  
  
Advisors: Lenny Taelman (Amsterdam), Fabrizio Andreatta (Milano) and Bas Edixhoven (Leiden).  
Thesis: *Shtuka cohomology and special values of Goss  $L$ -functions*.  
<https://hdl.handle.net/1887/61145>
- 2013 MSc, Universiteit Leiden (1st year), Université Paris-Sud (2nd year).  
ALGANT program.  
  
Advisor: François Charles.  
Thesis: *Zero-cycles on surfaces*.  
<http://algant.eu/documents/theses/mornev.pdf>
- 2011 MSc degree in "Mathematics. Computer Science", Ural Federal University.

**Grants**

SNSF Ambizione grant, 2021 – 2025.

ETH Zürich Postdoctoral Fellowship, 2019 – 2021.

Leiden/Huygens Fellowship, 2013 – 2017.  
There are three such fellowships per year for the entire faculty of science.

ALGANT Doctoral Scholarship, 2013 – 2017.

ALGANT Master Scholarship, 2011 – 2013.

**Lecture series**

- 2020 Arithmetic of function fields.  
ICMAT, Universidad Autónoma de Madrid.
- 2019 Shtuka cohomology and special values of Goss  $L$ -functions.  
Université Claude Bernard Lyon 1.
- 2018 Arithmetic of shtukas.  
Arithmétique et géométrie des chtoucas.  
Université de Caen.

**Teaching**

Riemann surfaces (MATH-410).  
EPFL, Fall 2023 and Fall 2024, master course, lecturer.

Elliptic curves.  
ETH Zürich, Spring 2020, reading course for master students, lecturer.

$p$ -adic Galois representations.  
ETH Zürich, Fall 2019, graduate course, lecturer.

Étale cohomology seminar.  
ETH Zürich, 2018 – 2019, co-organized with Richard Pink.  
<https://max-mornev.github.io/etale.html>

Galois Representations and Automorphic Forms.  
Universiteit van Amsterdam, Fall 2016, national graduate level course, teaching assistant.

**Organizational experience**

- 2015 Pavel Solomatin and I organized a research seminar on Drinfeld modules:  
<https://max-mornev.github.io/dm.html>
- 2011 School on algebra and algebraic geometry (Yekaterinburg).  
<https://marina-p.info/school-on-algebra-and-algebraic-geometry>

**Service**

Reviewed a grant application, a book and numerous papers.

**Talks**

- 2025 Local monodromy of  $A$ -motives  
First Function Field Days  
ICMAT
- 2024 Local Kummer theory for Drinfeld modules  
ICMAT, Universidad Autónoma de Madrid
- Local Kummer theory for Drinfeld modules  
2nd AMS-UMI International Joint Meeting
- Local Kummer theory for Drinfeld modules  
Workshop “Alpbach 2024”
- 2022 Local monodromy of  $A$ -motives  
Second joint congress of AMS–EMS–SMF  
Université Grenoble Alpes

- 2021 An  $\infty$ -adic criterion of good reduction for Drinfeld modules  
Groups, arithmetic and algebraic geometry seminar  
EPFL
- What is a shtuka?  
Groups, arithmetic and algebraic geometry seminar  
EPFL
- What is a shtuka?  
Zürich Graduate Colloquium  
ETH Zürich
- Local monodromy of Drinfeld modules  
Universität Münster
- 2020 Local monodromy of Drinfeld modules  
Number Theory Seminar  
University of California San Diego
- Local monodromy of Drinfeld modules  
AMS Fall Eastern Virtual Sectional Meeting
- Local monodromy of Drinfeld modules  
Oberseminar Algebraische Geometrie  
Universität Zürich
- Tate conjectures in function field arithmetic  
Upstate New York Online Number Theory Colloquium
- 2019 An  $\infty$ -adic criterion of good reduction for Drinfeld modules  
Arithmetic of Function Fields and Diophantine Geometry  
National Center for Theoretical Sciences, Taipei
- Shtuka cohomology and special values of Goss  $L$ -functions  
AMS Spring Central and Western Joint Sectional Meeting  
University of Hawai'i at Mānoa
- An  $\infty$ -adic criterion of good reduction for Drinfeld modules  
Hawai'i Number Theory Conference  
University of Hawai'i at Mānoa
- 2018 Shtuka cohomology and special values of Goss  $L$ -functions  
Seminar der Forschergruppe 'Symmetrie, Geometrie und Arithmetik'  
Universität Heidelberg
- Regulator theory for elliptic shtukas  
Arithmetic and algebraic geometry seminar  
Universiteit van Amsterdam
- Formulas of Tamagawa type in positive characteristic

This Week's Discoveries (Faculty of Science colloquium)  
Universiteit Leiden

- 2017 Shtuka cohomology and special values of Goss  $L$ -functions  
Conference "Arithmetic of Function Fields"  
Universität Münster

Shtuka cohomology and special values of Goss  $L$ -functions  
Intercity number theory seminar  
Universiteit van Amsterdam

- 2016 Shtuka cohomology and special values of Drinfeld modules  
Seminar Zahlentheorie  
ETH Zürich

- 2015 Tannakian properties of Frobenius-invariant sheaves  
Workshop on function fields, zeta functions and Drinfeld modular forms  
Imperial College London