# Maxim Mornev

Curriculum vitae, actual as of April 22, 2025.

### Contact details

E-mail: maxim.mornev@icmat.es
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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, graduade 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