# Max (Maxim) Mornev

Curriculum vitae, actual as of April 16, 2025.

#### **Contact details**

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## Mailing address

(to appear soon)

### Research area

Number theory

# Preprints and papers

Local Kummer theory for Drinfeld modules (with Richard Pink) 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.

#### **Talks**

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

An ∞-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 ∞-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

# Organizational experience

2011 School on algebra and algebraic geometry (Yekaterinburg)
https://marina-p.info/school-on-algebra-and-algebraic-geometry

In 2015 Pavel Solomatin and I organized a seminar on Drinfeld modules: https://max-mornev.github.io/dm.html

## **Service**

Reviewed a grant application, a book and numerous papers.