Maxim Mornev

Curriculum vitae, actual as of April 27, 2025.

Contact details

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Mailing address

Instituto de Ciencias Matemáticas
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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 ∞-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 Hawaiʻi at Mānoa

       An ∞-adic criterion of good reduction for Drinfeld modules
       Hawaiʻi Number Theory Conference
       University of Hawaiʻi 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