

CURRICULUM VITAE

FERDINAND WAGNER

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I'm currently a Ph.D. student at the MPIM/University of Bonn under the supervision of Peter Scholze. I'm interested in arithmetic geometry and homotopy theory, especially in cohomology theories for arithmetic schemes and their construction via localising invariants.

Education

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| 2022 – 2025
(expected) | <i>Doctoral studies (Mathematics)</i> at the MPIM/University of Bonn
Advisor: Professor Dr. Peter Scholze |
| 2019 – 2022 | <i>Master's degree (Mathematics)</i> at the University of Bonn
Master's thesis: <i>On q-de Rham Cohomology</i> . Grade: 1.0 |
| 2016 – 2019 | <i>Bachelor's degree (Mathematics)</i> at the University of Bonn
Bachelor's thesis: <i>Serre Duality for Open Varieties</i> . Grade: 1.0 |

Publications

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Preprints

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| (in preparation) | <i>q-Hodge Complexes over the Habiro Ring</i> |
| (in preparation) | <i>q-de Rham Cohomology and Topological Hochschild Homology over ku</i> |
| October 2024 | <i>Derived q-Hodge Complexes and refined TC^-</i> , joint work with Samuel Meyer, arXiv: 2410.23115 [math.AT] |
| July 2024 | <i>q-Witt vectors and q-Hodge complexes</i> , arXiv: 2410.23078 [math.NT] |
| August 2017 | <i>Totally Odd Depth-Graded Multiple Zeta Values and Period Polynomials</i> , joint work with Charlotte Dietze, Chokri Manai, and Christian Nöbel, arXiv: 1708.07210 [math.NT] |

Conference Talks

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| August 2025 | <i>Habiro Cohomology and $THH(-/ku)$</i> , Workshop 2533 on Algebraic K -Theory, MFO Oberwolfach |
| June 2025 | <i>q-Hodge Filtrations and Habiro Cohomology</i> , Workshop 2526 on Non-Archimedean Geometry and Applications, MFO Oberwolfach |
| May 2025 | <i>Examples of Analytic Stacks: Schemes, Complex and p-adic Analytic Spaces and The Gaseous Base Stack</i> , Workshop on Arakelov Geometry and Condensed Mathematics, IRMA Strasbourg |
| September 2024 | <i>Refined TC^- over ku and Derived q-Hodge Complexes</i> , Workshop on Dualisable Categories & Continuous K -Theory, MPIM Bonn |

Seminar Talks

May 2025	<i>q-Hodge filtrations, Habiro cohomology, and THH over ku</i> , Arithmetic Geometry Seminar, TU Darmstadt
January 2025	<i>Elliptic Genera</i> , IMPRS seminar on Modular Forms, MPIM Bonn
December 2024	<i>Refined TC^- over ku</i> , Algebra and Topology Seminar, University of Copenhagen
December 2024	<i>Towards a Habiro-valued Cohomology Theory</i> , Oberseminar Arithmetische Geometrie und Darstellungstheorie, MPIM Bonn
November 2024	<i>Higher Weight Motivic Cohomology, Algebraic K-theory</i> , ARGOS seminar on Motivic Geometrization of Local Langlands, University of Bonn
November 2024	<i>Habiro Rings in Arithmetic Geometry</i> , Algebra and Number Theory Seminar, UC Dublin
June 2024	<i>q-Hodge Cohomology and Refined TC^-</i> , Séminaire Arithmétique et Géométrie Algébrique, IRMA Strasbourg
June 2024	<i>q-Hodge Cohomology and Refined TC^-</i> , thesis talk in the IMPRS seminar, MPIM Bonn
December 2022	<i>The Moduli Stack of Formal Groups</i> , IMPRS seminar on Formal Groups and Chromatic Homotopy Theory, MPIM Bonn
May 2022	<i>Sato–Tate Distributions for Elliptic Curves</i> , IMPRS seminar on the Sato–Tate conjecture, MPIM Bonn

Teaching Experience

September 2023	<i>Lecturer</i> for a week-long course on <i>∞-Categories in Topology</i> , QED Academy Sonthofen Scope: ≈ 39 hours of lectures, from the definition of a quasi-category to the construction of the Adams spectral sequence.
2018 – 2022	<i>Tutor</i> for various lecture courses, University of Bonn Tasks: Conducting weekly exercise sessions, grading students' weekly submissions and the final exam

Expository writings

2023 – 2025	<i>∞-Categories in Topology</i> , lecture notes on a QED Academy course. Available at florianadler.github.io/inftyCats/inftyCats.pdf ($\approx 70\%$ finished).
2020 – 2021	<i>Algebraic & Hermitian K-Theory</i> , lecture notes on Fabian Hebestreit's lecture course at the University of Bonn. Available at florianadler.github.io/AlgebraBonn/KTheory.pdf .

Volunteer work

since 2017	<i>Coach</i> for German students at mathematics competitions, including the German IMO team Tasks: Conducting training seminars, preparing ≈ 200 pages of training material and exercise problems, correcting students' submissions for exercise problems
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since 2017 *Grader* at German mathematics competitions, including the German National Mathematics Olympiad and the German IMO selection
Tasks: Grading students' solutions, preparing exam problems

June 2019 *Youth leader* at the LSGM maths summer camp
Tasks: Supervision, lessons for students of grades 07–12

Honours and Awards

January 2020 *Bachelor's thesis prize* of the Bonn Mathematical Society

2017 – 2019 *International Mathematics Competition for University Students*, three first prizes, overall 6th place in 2019

2016 – 2021 *Scholarship*, Studienstiftung des Deutschen Volkes

2014 – 2016 *International Mathematics Olympiad*, two silver medals and one bronze medal

Updated August 18, 2025