Klaus Mattis

Curriculum Vitae

Contact

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Research Interests

Unstable and Stable (Motivic) Homotopy Theory, Synthetic Deformations, Algebraic Geometry in positive characteristic.

Education

2023–present **PhD in Mathematics**, *JGU Mainz*
Thesis: Localization functors in unstable motivic homotopy theory
Advisor: Tom Bachmann

2022 **MSc in Mathematics (grade: 1.0)**, *LMU Munich*
Thesis: *Isomotives of Dimension at most 1*
Advisor: Fabien Morel

2021 **BSc in Mathematics**, *LMU Munich*
Thesis: *Examples of étale (φ, Γ)-modules*
Advisor: Werner Bley

2017–2022 **Studies in Mathematics**, *LMU Munich*

Publications

2026 **Unstable arithmetic fracture squares in ∞-topoi**, *Journal of Homotopy and Related Structures*, `arXiv:2404.18618`

2025 **The derived ∞-category of Cartier Modules**, *(with Timo Weiß)*, *Journal of Pure and Applied Algebra*, `arXiv:2410.17102`

Preprints

2025 **Nilpotence of η in étale motivic spectra**, *(with Swann Tubach)*, submitted, `arXiv:2511.09476`

2025 **Monadic resolutions for generalized spaces**, *(with Tom Bachmann and Anton Engelmann)*, preprint, `arXiv:2511.07064`

2025 **The derived ∞-category of Frobenius Modules**, *(with Timo Weiß)*, submitted, `arXiv:2510.23267`

2025 **Unstable étale motives**, submitted, `arXiv:2507.20320`

2024 **The pro-Nisnevich topology**, submitted, `arXiv:2404.17314`

2024 **Unstable p-completion in motivic homotopy theory**, submitted, `arXiv:2401.17848`

Selected Talks

Jan 2026	**Monadic resolutions for generalized spaces**, University of Copenhagen
July 2025	**Étale rigidity for motivic spaces**, Motives and Arithmetic Geometry, Darmstadt
June 2025	**Canonical resolutions for motivic spaces**, Young Topologists Meeting, Stockholm
April 2025	**Étale rigidity for motivic spaces**, École Normale Supérieure, Lyon
April 2025	**Étale rigidity for motivic spaces**, University of Toronto
June 2024	**Proof of the Hopkins-Morel-Hoyois theorem**, International Workshop on Algebraic Topology, Shanghai
Feb 2024	**Unstable p-completion in motivic homotopy theory**, YoungHom Seminar, online

Teaching Experience

Summer 24	**Lecturer (1/3 of course)**, *Algebraic Topology I*, JGU Mainz

Teaching Assistant / Tutor

Winter 25/26	**Teaching Assistant**, *Math for Computer Science 1*, JGU Mainz
Winter 24/25	**Teaching Assistant**, *Math for Computer Science 1*, JGU Mainz
Winter 23/24	**Teaching Assistant**, *Math for Computer Science 2b*, JGU Mainz
Summer 23	**Teaching Assistant**, *Differential Geometry*, JGU Mainz
Summer 21	**Tutor**, *Commutative Algebra*, LMU Munich
Winter 20/21	**Tutor**, *Algebra*, LMU Munich
Summer 20	**Tutor**, *Linear Algebra 2*, LMU Munich
Winter 19/20	**Tutor**, *Linear Algebra 1*, LMU Munich

Organization

2023–2026	**Organizer**, *PhD-Seminar*, JGU Mainz
Summer 25	**Organizer**, *Seminar on motivic spectra*, JGU Mainz
Summer 20	**Organizer**, *Reading Class on Category Theory*, LMU Munich

Academic Service

Oct 2025	**Organizer**, *GAUS Workshop on "Motives and Higher Categories"*, JGU Mainz
Jan 2025	**Organizer**, *GAUS Junior AG: "Maps between spherical group rings"*, JGU Mainz
Mar 2024	**Co-organizer**, *Winter school on unstable motivic homotopy theory*, JGU Mainz

Non-academic Service

2016–present	**Volunteer**, *Red Cross (BRK)*, Munich
2016–2023	**Software Developer**, *Microstep AG*
2019–2020	**Volunteer Author**, *Serlo*, Open-source platform for higher mathematics education

Languages

German	Native
English	Fluent