
Curriculum Vitæ: Aaron Hofer

Contact details

Pronouns: he/him/his

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Research interests

Mathematical physics, low-dimensional topology, representation theory, (higher) category theory;
More specifically: topological and conformal field theories, tensor categories, module categories,
non-semisimple quantum invariants;

Education

10/2022 – 09/2025	PhD in Mathematics, University of Hamburg Grade: summa cum laude thesis: Defects in non-semisimple 3d topological field theory and 2d logarithmic conformal field theory supervisor: Ingo Runkel
10/2019 – 02/2022	MSc in Physics, University of Vienna Vienna Master Class Mathematical Physics thesis: TQFTs with additional structure supervisor: Nils Carqueville
10/2015 – 08/2018	BSc in Physics, University of Innsbruck thesis: Phononic excitations of nanoscale solids supervisor: Oriol Romero-Isart

Employment

10/2025 – 09/2027	Max Planck Institute for mathematics Postdoctoral Research Fellow
10/2022 – 09/2025	University of Hamburg and Cluster of Excellence “Quantum Universe” Research assistant

Preprints and theses

2024 November	Simons Lectures on Categorical Symmetries (Notes for David Jordans lecture, with Jonte Gödicke and Anja Švraka), available at https://arxiv.org/abs/2411.09082
2024 May	Modular functors from non-semisimple 3d TFTs (with Ingo Runkel), available at https://arxiv.org/abs/2405.18038
2022 February	TQFTs with additional structure Master’s thesis, available at https://theses.univie.ac.at/detail/62030/

Talks

October 2025	Séminaire de Géométrie et Topologie, Toulouse: CFT/TFT correspondence beyond semisimplicity
October 2025	CFT: Algebraic, Topological, and probabilistic approaches in Conformal Field Theory, Orsay:
December 2024	TFT construction of CFT correlators beyond semisimplicity Creutzig and Meusburger Group Seminar, Erlangen:
November 2024	CFT/TFT correspondence beyond semisimplicity TQFT Club Seminar, Lisbon Online:
April 2024	CFT/TFT correspondence beyond semisimplicity Carqueville group seminar, Vienna:
March 2024	CFT/TFT correspondence beyond semisimplicity Workshop on New Directions in Conformal Field Theory, Hamburg:
September 2023	Modular functors from non-semisimple 3d TFTs QU Day 3 2023, Hamburg:
April 2023	CFT/TFT correspondence beyond semisimplicity Seminar Quantum Physics and Geometry, Hamburg:
March 2023	Topological defects in the 2d Ising CFT Carqueville group seminar, Vienna:
June 2022	Lyubashenko's modular functor via holography Erlangen-Wien-Würzburg Meeting 2022, Würzburg: Closed spin TQFTs in two dimensions

Teaching experience

Summer term 2025	Exercise classes: Arithmetic for teachers, University of Hamburg
Winter term 2025	Exercise classes: Advanced algebra, University of Hamburg
Winter term 2024	Exercise classes: Mathematik I für Studierende der Geophysik /Ozeanographie, Meteorologie und Physik und der Computing in Science, University of Hamburg
Summer term 2023	Exercise classes: Advanced algebra - homological algebra and representation theory, University of Hamburg
Winter term 2022/23	Exercise classes: Hopf Algebras, quantum groups and topological field theory, University of Hamburg
Winter term 2018/19	Tutor in Theoretical Physics I: Classical Mechanics, University of Innsbruck

Attended Schools and Conferences

08 – 12.09.2025	The Physics and Mathematics of Boundaries, Impurities, and Defects (School)
12 – 16.05.2025	Conference on "Quantum Topology"
25.10.2024	17th Seminar on Conformal Field Theory
10 – 14.06.2024	Categorical Symmetries in Quantum Field Theories (School)
18 – 22.03.2024	Workshop on New Directions in Conformal Field Theory

19.01.2024	16th Seminar on Conformal Field Theory
08 – 10.11.2023	WPC Theoretical Physics Symposium
04 – 08.09.2023	Categorical Symmetries in Quantum Field Theories (School)
14 – 18.08.2023	Higher structures in Functorial Field Theory
19 – 23.06.2023	Hausdorff School: “TQFTs and their connections to representation theory and mathematical physics”
18 – 22.07.2022	Strings 2022 (student volunteer)
03 – 06.09.2020	Vienna Summer School 2020 on Gravitational Quantum Physics

Organisational work

Summer term 2024 – Organiser Junior “Zentrum für Mathematische Physik” Seminar
January 2023 – Cluster of Excellence “Quantum Universe” Research School Student
 Council

Awards and prizes

In 2022, I received the [Alfred-Wehrl award](#) for outstanding Master students in theoretical or mathematical physics at the University of Vienna for my Masters's thesis.