
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, generalised symmetries, 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

2025 September	Defects in non-semisimple 3d topological field theory and 2d logarithmic conformal field theory Doctoral thesis, available at https://ediss.sub.uni-hamburg.de/handle/ediss/12017
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: TFT construction of CFT correlators beyond semisimplicity
December 2024	Creutzig and Meusburger Group Seminar, Erlangen: CFT/TFT correspondence beyond semisimplicity
November 2024	TQFT Club Seminar, Lisbon Online: CFT/TFT correspondence beyond semisimplicity
April 2024	Carqueville group seminar, Vienna: CFT/TFT correspondence beyond semisimplicity
March 2024	Workshop on New Directions in Conformal Field Theory, Hamburg: Modular functors from non-semisimple 3d TFTs
September 2023	QU Day 3 2023, Hamburg: CFT/TFT correspondence beyond semisimplicity
April 2023	Seminar Quantum Physics and Geometry, Hamburg: Topological defects in the 2d Ising CFT
March 2023	Carqueville group seminar, Vienna: Lyubashenko's modular functor via holography
June 2022	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

06 – 10.10.2025	CFT: Algebraic, Topological, and probabilistic approaches in Conformal Field Theory
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.