
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

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|-------------------|---|
| 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

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| 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

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| 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 |

Talks

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

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.