Fritz Grimpen

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Education

since 01/2023 **PhD student in Mathematics**, University of Bremen, Germany
Advisor: Prof. Anastasios Stefanou

04/2020 – 12/2022 **M.Sc. Mathematics**, University of Bremen, Germany
Area of specialization: Algebra
Minor subject: Computer science

10/2015 – 03/2020 **B.Sc. Mathematics**, University of Bremen, Germany

Academic positions

since 02/2023 **Research assistant**, University of Bremen, Germany
Institute for Algebra, Geometry, Topology and their Applications (ALTA)
Working group: Mathematical foundations of data analysis

10/2022 – 01/2023, 10/2018 – 03/2021 **Undergraduate teaching assistant**, Faculty 3, University of Bremen, Germany

Publications

Preprints

[1] **Fritz Grimpen** and Anastasios Stefanou. *On minimal flat-injective presentations over local graded rings*. Oct. 2024. arXiv: 2410.17667 [math.AC]. Accepted.

[2] **Fritz Grimpen** and Anastasios Stefanou. *Cofiltrations of spanning trees in multiparameter persistent homology*. Mar. 2023. arXiv: 2312.00235v2 [math.AT].

Extended abstracts

[3] **Fritz Grimpen** and Anastasios Stefanou. *Persistence of complements of spanning trees*. In: *Computational Geometry: Young Researchers Forum 2023*. Extended abstract. June 2023.

Talks

Contributed

March 2025 *Minimal flat-injective presentations and related invariants*, Geometry Seminar, TU Graz, Austria

November 2023 *Resolutions and presentations of persistence modules*, ALTA Oberseminar, University of Bremen, Germany

August 2023 *Decompositions of Sheaves*, BIREP Summer School on persistence modules, Bad Driburg, Germany

June 2023 *Persistence of complements of spanning trees*, Computational Geometry Week 2023: Young Researchers Forum (CG:YRF 2023), Dallas (TX), USA

April 2023 *Constructing cycle generators for multiparameter persistent homology using spanning trees*, Network Data Analysis Group Meeting (virtual), Ohio State University, USA

September 2021 *M-addition: A toolbox for the classification of operations*, ALTA Oberseminar, University of Bremen, Germany

July 2021 *The classification problem of operations on convex bodies*, ALTA Oberseminar, University of Bremen, Germany

Research visits

3.3.2025 – 28.3.2025 Michael Kerber, **Institute of Geometry**, Graz University of Technology, Austria

Conferences and workshops

August 2024 **Masterclass on Derived Category Methods in Ring Theory**, Aarhus, Denmark

August 2024 **Young Topologists Meeting 2024**, Münster, Germany

August 2023 **BIREP Summer School on persistence modules**, Bad Driburg, Germany

June 2023 **Computational Geometry Week 2023 / 39th International Symposium on Computational Geometry (SoCG)**, Dallas (TX), USA

July 2022 **Applied Topology**, Będlewo, Poland

Teaching experience

University of Bremen, Germany

Summer 2025 **Mathematics 2 for computer science**, Coordination of recitations

Winter 2024 **Algebra**, Exercise group

Summer 2024 **Introduction to discrete structures**, Exercise sessions

Winter 2023 **Algebra**, Exercise group

Summer 2023 **Topology**, Exercise group

Winter 2022 **Algebra**, Exercise group

Winter 2020 **Linear algebra 1**, Exercise group

Summer 2020 **Mathematics 2 for computer science**, Exercise group

Winter 2019 **Mathematics 1 for computer science**, Exercise group

Summer 2019 **Mathematics 2 for computer science**, Exercise group

Winter 2018 **Mathematics 1 for computer science**, Exercise group

Bremen, Germany, June 20, 2025