hausdorff center for mathematics

UNIVERSITÄT BONN

Special Topic School | September 28 - October 02, 2026

Persistent Homology and Applications in Topological Data Analysis

Organizers:
Ulrich Bauer (Technical University of Munich), Felix Boes (University of Bonn), Benedikt Kolbe (University of Bonn), Vanessa Robins (Australian National University)

Venue: Lipschitz Lecture Hall · Mathematics Center · Endenicher Allee 60 · 53115 Bonn

Over the last two decades, research in persistent homology and its applications in topological data analysis has developed from a conceptual mathematical framework into a powerful tool whose use has become commonplace in fields as diverse as machine learning and differential geometry. Modern approaches to understanding the geometric and topological structure of point clouds make extensive use of these methods, necessitating a good command of the relevant tools developed in the persistent framework.

The aim of this school is to bring together researchers working in the field of computational topology, particularly in persistence theory and its applications in Topological Data Analysis (TDA), to work together on topics in the field. By fostering collaboration at the intersection of mathematics, data science, and the natural sciences, the school will prepare students at the PhD or postdoc level with a solid background in topology or persistent homology to tackle open problems in TDA. There will be a selection of shorter contributed talks.

Lecture Series by:

- Kathryn Hess Bellwald (École Polytechnique Fédérale de Lausanne)
- Magnus Bakke Botnan (Vrije Universiteit Amsterdam)
- Yasuaki Hiraoka (Kyoto University)
- David Loiseaux (Inria Saclay)

Call for participation: Participation is free. If you are interested in participating, please fill out the application form at the following link: **https://math-events.uni-bonn.de/event/654/**. Successful applicants are selected based on research background. To be considered, please submit a CV and research overview. To encourage the participation of researchers facing increased financial burden, such as many researchers from developing countries, a small number of funded places are available (including support for travel and/or accommodation). You can indicate in the application form, for which type of financial support you would like to be considered. Additional participants are welcome to join at their own cost.
The deadline for applications to participate in the school is May 31st, 2026 (CET).