Teaching Expertise – Prof. Dr. Boris Vertman

Supervised Ph.D's and Postdocs

Postdocs:

Dr. Matheus Santos (2025-2026)
funded by FAPESP, Sao Paolo, Brazil

Dr. Mannaim Vitti (2024)
funded by FAPESP, Sao Paolo, Brazil

Dr. Tobias Marxen (2017-2024)
funded by Geometry at Infinity SPP (DFG)

Dr. Jorgen Olsen Lye (2021-2023)
funded by Geometry at Infinity SPP (DFG)

current Ph.D's:

Paul Hafemann (starting in October 2025)
Cartan geometric formulation of gravity

finished Ph.D's

Alvaro Sanchez (graduation September 2025)
Index theory on manifolds with fibred boundaries

Orville Damaschke (graduated summer 2023)
Gamma index theory on Lorentzian space-times

Guiseppe Gentile (graduated winter 2022)
Mean curvature flow in Lorentzian space-times

Bruno Caldera (graduation in September 2021)
Renormalized Yamabe flow on non-compact manifolds

Mohammad Talebi (graduated winter 2020)
Spectral geometry for spaces with fibered boundary.

Marcel Wunderlich (graduated summer 2019)
Mean curvature flow with conical singularities

Supervised M.Sc. & B.Sc.

finished M.Sc.

Paul Hafemann (graduated in August 2023)
Extremals of determinants of discrete Laplacians

Sina Held (graduated in September 2021)
Allen-Cahn phase transition on singular spaces

Alexander Meiners (graduated in September 2021)
Discrete zeta function and Epstein-Riemann hypothesis

Martin Dombeck (graduated in February 2021)
Kirchhoff theorem and the dimer model

Benedikt Sauer (graduated in June 2015)
Regularizing infinite sums of determinants

finished B.Sc.

numerous B.Sc. in Bonn, Münster and Oldenburg.

Courses given at the University Oldenburg

lectures	**Math. Foundations of Data Science** (2024)
	Analysis I, II, III, (2017-18, 2020-21, 2024-26)
	Differential geometry, (2020, 2023)
	Geometric Analysis, ΨDO, (2021)
	Mathematics in Biology 2, (2019)
	Functional Analysis, (2019)
	Topology I, (2023)
	Complex Analysis, (2018, 2019, 2022)
	Partial Differential Equations, (2018)
	Elementary PDE, (2018, 2020, 2023).
	Spectral Theory, (2017, 2019)
seminars	**Calabi-Yau conjecture on Fano manifolds**
	Wave equations and General relativity
	Atiyah-Singer index theorem
	Microlocal analysis & many more.

Courses given at the University Münster

Winter 2016/17	**Differential Geometry I**, lectures and exercises
Winter 2015/16	**Complex Analysis**, (Funktionentheorie für Lehramt)
Summer 2015	**Fourier series and Fourier integrals**, student seminar
Winter 2014/15	**Geometric Analysis**, lectures and exercises

Courses given at the University Bonn

Summer 2016	**Introduction into Kähler Geometry and**, **Kähler Einstein Metrics**, lectures and exercises (held as W3 substitute professor at Bonn)
Summer 2014	**Geometric Analysis II**, lectures and exercises
Winter 2012/13	**Analysis III**, lectures and exercises
Sommer 2012	**Analysis II**, lectures and exercises
Winter 2010/11	**Microlocal analysis and b-calculus**, lectures
Summer 2013	**Exercises in Geometry and Topology**

Summer 2011	**Special functions in mathematical physics**, seminar
Winter 2010/11	**The Index of Elliptic Operators**, seminar
Summer 2009	**Topological Quantum Field Theory**, seminar