

Sebastian Boldt - CURRICULUM VITAE

PERSONAL DATA

SURNAME	BOLDT
NAME	SEBASTIAN

QUALIFICATIONS

DEGREE

Diplom-Mathematiker (equivalent to Master's in mathematics), grade: 1,0 (very good), Humboldt-Universität zu Berlin, Germany, 29.09.2011, thesis title: "Eigenschaften des Dirac-Spektrums auf Linsenräumen" ("Properties of the Dirac-spectrum on lens spaces")

DOCTORAL DEGREE OR EQUIVALENT QUALIFICATION EARNED IN ITALY OR ABROAD

Dr. rer. nat. (Doctor in the natural sciences), Humboldt-Universität zu Berlin, Germany, 27.10.2017 (day of defense), thesis title: "The height of compact nonsingular Heisenberg-like Nilmanifolds", score: magna cum laude

RESEARCH CONTRACTS, RESEARCH FELLOWSHIP CONTRACTS, POSTDOCTORAL SCHOLARSHIPS OR SIMILAR CONTRACTS

- 01.01.2012 - 31.12.2016: Humboldt-Universität zu Berlin, Germany, 5 years, research contract as part of the project "SFB 647 - Space - Time - Matter. Analytic and Geometric Structures" funded by the German Research Foundation (DFG); member of projects B6 (Analytic and Spectral Properties of Geometric Operators) und C2 (Differential Geometry: Geometric and Spectral Invariants of Riemannian, Lorentzian and Conformal Manifolds)
- 01.10.2017 - 30.09.2018: Humboldt-Universität zu Berlin, Germany, 1 year, Postdoctoral contract in the working group "Differential Geometry and Global Analysis" of Prof. Dr. Helga Baum
- 01.10.2018 - 30.09.2023: Universität Leipzig, Germany, 5 years, Academic Assistant (comparable to nontenured assistant professor) in the working group "Differential geometry" of Prof. Dr. Hans-Bert Rademacher
- 01.10.2023 - 30.09.2025: Technische Universität Chemnitz, Germany, 1+ years, Postdoctoral contract, member of the working group "Analysis" of Prof. Dr. Peter Stollmann

TEACHING ACTIVITIES AT ITALIAN OR FOREIGN UNIVERSITIES

Entire courses taught (all at Universität Leipzig):

- Winter term 2022 / 23: lecture + tutorial (2+2 hours per week) "Advanced Differential Geometry II - Spin Geometry"; master's course for mathematicians and mathematical physicists
- Summer term 2022: lecture + tutorial (4+2 hours per week) "Mathematics 2 for Physicists"; bachelor's course for physicists
- Winter term 2021 / 22: lecture (4 hours per week) "Riemann surfaces"; master's course for mathematicians
- Winter term 2020 / 21: lecture + tutorial (2+2 hours per week) "Advanced Differential Geometrie II - Spin Geometry"; master's course for mathematicians and mathematical physicists

Seminars taught (all at Universität Leipzig, 2 hours per week each):

- Summer term 2023: “structure and representation theory of nilpotent Lie groups”
- Winter term 2022 / 23: “Index Theory”

Tutorials taught (hours per week indicated refer only to my part of the course):

- Summer term 2024:

- “Dirichlet forms, Markov processes and semigroups”; master’s course for mathematicians; 2 hours per week
- „Vector analysis and ordinary differential equations“; bachelor’s course for mathematicians, economists and finance mathematicians; 2 hours per week

- Winter term 2023 / 24:

- “Metric measure spaces”; master’s course for mathematicians; 2 hours per week
- “Higher mathematics I”; bachelor’s course for chemists, engineers and computer scientists; 2 hours per week

- Summer term 2023:

- “Linear algebra for computer scientists”; bachelor’s course for computer scientists; 2+2 hours per week

- Winter term 2021 / 22: “Mathematics 1 for Physicists”; bachelor’s course for physicists; 2+2 hours per week
- Summer term 2021: „Mathematics 4 for Physicists“; bachelor’s course for physicists; 2+2 hours per week
- Summer term 2020: “Linear algebra 2”; bachelor’s course for mathematicians; 2+2 hours per week
- Winter term 2019 / 20:

- “Linear algebra I”; bachelor’s course for mathematicians; 2 hours per week
- „Differential geometry I“; master’s course for mathematicians; 2 hours per week

- Summer term 2019: “Analysis II”; bachelor’s course for mathematicians and future teachers; 2+2 hours per week
- Winter term 2018 / 19:

- “Linear algebra I”; bachelor’s course for mathematicians and future teachers; 2 hours per week
- “Differential geometry I”; master’s course for mathematicians; 2 hours per week

- Summer term 2018: “Analysis II”; bachelor’s course for mathematicians, computer scientists and future teachers; 2+2 hours per week
- Winter term 2017 / 18: “Analysis I”; bachelor’s course for mathematicians, computer scientists and future teachers; 2+2 hours per week
- Summer term 2016: “Analysis I”; bachelor’s course for mathematicians, computer scientists and future teachers; 2 hours per week
- Winter term 2013 / 14: “Analysis I”; bachelor’s course for mathematicians, computer scientists and future teachers; 2 hours per week
- Winter term 2012 / 13: “Analysis I*”; bachelor’s course for mathematicians; 2 hours per week

ORGANISATION, SUPERVISION AND COORDINATION OF NATIONAL AND INTERNATIONAL RESEARCH GROUPS, OR PARTICIPATION IN THEM

01.01.2012 - 31.12.2016: PhD student, Humboldt-Universität zu Berlin, Germany, 5 years, research contract as part of the project “SFB 647 - Space - Time - Matter. Analytic and Geometric Structures” funded by the German Research Foundation (DFG); member of projects B6 (Analytic and Spectral Properties of Geometric Operators) und C2 (Differential Geometry: Geometric and Spectral Invariants of Riemannian, Lorentzian and Conformal Manifolds)

SPEAKING AT NATIONAL AND INTERNATIONAL CONFERENCES AND CONVENTIONS

- October 2023: conference “Recent results on analysis and geometry of (families of) Dirichlet spaces”, organized by Technical University Chemnitz, 5 days
- December 2021: Oberwolfach Workshop “Variable Curvature Bounds, Analysis and Topology on Dirichlet Spaces”, 5 days
- January 2020: bi-annual “n-cities seminar“, organised by Universität Leipzig, Universität Potsdam, Technische Universität Chemnitz, 1 day, held at Max-Planck-Institute for Mathematics in the Natural Sciences
- September 2015: Annual conference of the German Mathematics Association (DMV), organized by Universität Hamburg, 5 days
- September 2012: Annual conference of the German Mathematics Association (DMV), organized by Universität des Saarlandes, 5 days

NATIONAL AND INTERNATIONAL AWARDS AND ACCOLADES FOR RESEARCH ACTIVITY

- Award for best master’s thesis in the category “Geometry and topology” at the students conference 2012, part of the annual conference of the German Mathematics Association (DMV)
- Award for best talk in the category “Geometry and topology” at the students conference 2012, part of the annual conference of the German Mathematics Association (DMV)

QUALIFICATIONS UNDER ART. 24, PARAGRAPH 3.a AND 3.b, OF LAW No. 240/2010 OF 30 DECEMBER 2010

Having never held any position in Italy, I qualify for the position I apply for.

SCIENTIFIC PRODUCTION

SCIENTIFIC PUBLICATIONS

- *A Chern-Simons transgression formula for supersymmetric path integrals on spin manifolds.* With Sergio Luigi Cacciatori and Batu Güneysu. J. Geom. Phys., vol. 195, 2024. <https://doi.org/10.1016/j.geomphys.2023.105041>
- *Feynman-Kac formula for perturbations of order ≤ 1 and noncommutative geometry.* With Batu Güneysu. Stoch PDE: Anal Comp (2023) 11:1519-1552. <https://doi.org/10.1007/s40072-022-00269-3>
- *Relatively compact sets of Heisenberg manifolds.* Differential Geometry and its Applications, Vol. 76 (2021). <https://doi.org/10.1016/j.difgeo.2021.101739>
- *Scattering Theory and Spectral Stability under a Ricci Flow for Dirac Operators.* With Batu Güneysu. To appear in Ann. Fac. Sci. Toulouse, Math.
- *Properties of the Dirac spectrum on three dimensional lens spaces.* Osaka J. Math. 54 (2017), No. 4, 747-765.
- *An explicit formula for the Dirac multiplicities on Lens spaces.* With E. A. Lauret. J. Geom. Anal. 27, No. 1, 689-725 (2017). <https://doi.org/10.1007/s12220-016-9695-x>

Book (chapters):

- Contributions to the spectral geometry of locally homogeneous spaces. With Dorothee Schüth. Book chapter in Space - Time - Matter. Analytic and Geometric Structures. Brüning, J. (Ed.), Staudacher, M. (Ed.), Fiedler, B., et al. (2018). Berlin, Boston: De Gruyter. <http://dx.doi.org/10.1515/9783110452150>

Dissertation:

- *The Height of compact nonsingular Heisenberg-like Nilmanifolds*. Dissertation, Berlin, 2017.
<http://dx.doi.org/10.18452/18924>

Date

18.07.2024

Place

Leipzig, Germany