

Philipp REISER

Curriculum Vitae

ADDRESS Department of Mathematics EMAIL philipp.reiser@unifr.ch
University of Fribourg ORCID [0000-0002-7997-7484](https://orcid.org/0000-0002-7997-7484)
Ch. du musée 23 WEBSITE philipp-reiser.github.io
1700 Fribourg
Switzerland

RESEARCH INTERESTS Riemannian geometry and geometric topology. In particular: Riemannian manifolds of positive Ricci curvature, various other lower curvature bounds (scalar, sectional intermediate Ricci curvature), generalised notions of Ricci curvature, spaces and moduli spaces of Riemannian metrics, surgery, Lie group actions with low-dimensional orbit space

LANGUAGES German (native), English (fluent), French (intermediate), Chinese (intermediate)

1. EDUCATION

Feb 2019 - Aug 2022	Karlsruhe Institute of Technology Degree: PhD in Mathematics (Dr. rer. nat.) Thesis: <i>Generalized Surgery on Riemannian Manifolds of Positive Ricci Curvature</i> , doi: 10.5445/IR/1000150280 Supervisors: Prof. Wilderich Tuschmann and Prof. Fernando Galaz-García
Oct 2016 - Feb 2019	Karlsruhe Institute of Technology Degree: Master of Science in Mathematics (M.Sc.) Thesis: <i>Spaces and Moduli Spaces of Riemannian Metrics with Positive Scalar Curvature</i> Supervisor: Prof. Fernando Galaz-García
Oct 2013 - Sep 2016	Karlsruhe Institute of Technology Degree: Bachelor of Science in Mathematics (B.Sc.) Thesis: <i>The Plateau Problem and Conformal Parameters</i> Supervisor: Prof. Tobias Lamm

2. EMPLOYMENT

Sep 2023 - today	Department of Mathematics, University of Fribourg Position: Postdoc Supervisor: Prof. Anand Dessai
Sep 2022 - Aug 2023	Department of Mathematics, University of Fribourg Position: Postdoc within the SNSF-Project 200020E_193062 and the DFG-Priority programme SPP 2026 Supervisor: Prof. Anand Dessai
Oct 2019 - Aug 2022	Department of Mathematics, Karlsruhe Institute of Technology Position: Research associate within the RTG 2229 “Asymptotic Invariants and Limits of Groups and Spaces” Supervisor: Prof. Wilderich Tuschmann

3. PUBLICATIONS

5. P. Reiser, *Positive Ricci Curvature on Twisted Suspensions*. Int. Math. Res. Not. IMRN (to appear). [arXiv:2401.06587](https://arxiv.org/abs/2401.06587) (2024).
4. P. Reiser, D.J. Wraith, *Intermediate Ricci curvatures and Gromov's Betti number bound*. J. Geom. Anal. 33 (2023), 364, [doi:10.1007/s12220-023-01423-6](https://doi.org/10.1007/s12220-023-01423-6).
3. P. Reiser, *Generalized Surgery on Riemannian Manifolds of Positive Ricci Curvature*. Trans. Amer. Math. Soc. 376 (2023), 3397–3418, [doi:10.1090/tran/8789](https://doi.org/10.1090/tran/8789).
2. G. Frenck, F. Galaz-García, and P. Reiser, *Cohomogeneity One Manifolds and Homogeneous Spaces of Positive Scalar Curvature*. Bull. Lond. Math. Soc. 54 (2022), no.1, 71-82, [doi:10.1112/blms.12557](https://doi.org/10.1112/blms.12557).
1. P. Reiser, *Moduli Spaces of Metrics of Positive Scalar Curvature on Topological Spherical Space Forms*. Canad. Math. Bull. 63 (2020), no. 4, 901–908, [doi:10.4153/s0008439520000132](https://doi.org/10.4153/s0008439520000132).

4. PREPRINTS

7. P. Reiser, *Examples of tangent cones of non-collapsed Ricci limit spaces*. [arXiv:2409.11954](https://arxiv.org/abs/2409.11954) (2024).
6. P. Reiser, *Positive Ricci curvature on connected sums of fibre bundles*. [arXiv:2406.02274](https://arxiv.org/abs/2406.02274) (2024).
5. P. Reiser and D.J. Wraith, *Positive intermediate Ricci curvature on connected sums*. [arXiv:2310.02746](https://arxiv.org/abs/2310.02746) (2023).
4. P. Reiser and D.J. Wraith, *A generalization of the Perelman gluing theorem and applications*. [arXiv:2308.06996](https://arxiv.org/abs/2308.06996) (2023).
3. P. Reiser and F. Galaz-García, *Free torus actions and twisted suspensions*. [arXiv:2305.06068](https://arxiv.org/abs/2305.06068) (2023).
2. P. Reiser and D.J. Wraith, *Positive intermediate Ricci curvature on fibre bundles*. [arXiv:2211.14610](https://arxiv.org/abs/2211.14610) (2022).
1. P. Reiser, *Metrics of Positive Ricci Curvature on Simply-Connected Manifolds of Dimension $6k$* . [arXiv:2210.15610](https://arxiv.org/abs/2210.15610) (2022).

5. AWARDS AND HONORS

Nov 2019	Faculty award for outstanding achievements in the Master's programme in mathematics (€500) Karlsruhe Institute of Technology
----------	---

6. GRANTS AND FELLOWSHIPS

Mar 2022 - Jun 2022	Karlsruhe House of Young Scientists (KHYS) Research Travel Grant to visit Prof. David Wraith at Maynooth University (€4.775)
Dec 2019 - Oct 2020	Research Assistantship with Prof. Fernando Galaz-García at Durham University, funded by DFG grant GA 2050 2-1 within the SPP 2026 "Geometry at Infinity" (€24.200)
Feb 2019 - Aug 2019	DAAD Scholarship to visit Prof. Yihu Yang at Shanghai Jiao Tong University (€10.900)
Oct 2016 - Sep 2018	Scholarship Deutschlandstipendium (€7.200)

7. INVITED TALKS

Sep 2024	<i>Twisted suspensions, torus actions, and positive Ricci curvature</i> Virtual seminar on geometry with symmetries, held online
Jul 2024	<i>Manifolds of positive Bakry-Émery Ricci curvature</i> Differential Geometry Research Seminar, University of Münster
Jun 2024	<i>Manifolds of positive Bakry-Émery Ricci curvature</i> Differential Geometry Research Seminar, Karlsruhe Institute of Technology
Feb 2024	<i>Connected sums and lower curvature bounds</i> Colloquium of the Department of Mathematics and Statistics, Maynooth University
Feb 2024	<i>Surgery on weighted Riemannian manifolds of positive Bakry-Émery Ricci curvature</i> Geometry and Topology Seminar, Durham University
Nov 2023	<i>Positive intermediate Ricci curvature, surgery and Gromov's Betti number bound</i> Geometry Research Seminar, University of Freiburg i.Br.
Jul 2023	<i>Positive intermediate Ricci curvature, surgery and Gromov's Betti number bound</i> Workshop: Modern Techniques in Riemannian Geometry 2023, Universidad Nacional Autónoma de México (UNAM), participated online
May 2023	<i>Surgery and positive intermediate Ricci curvature</i> Differential Geometry Research Seminar, University of Münster
May 2023	<i>Positive intermediate Ricci curvature, surgery and Gromov's Betti number bound</i> Differential Geometry Research Seminar, Karlsruhe Institute of Technology
May 2023	<i>Positive intermediate Ricci curvature: an introduction and new examples</i> Riemannian Topology Seminar, University of Stuttgart
Apr 2023	<i>Surgery and positive intermediate Ricci curvature</i> Geometry and Topology Seminar, Syracuse University
Feb 2023	<i>Positive intermediate Ricci curvature on fibre bundles</i> Oregon Topology/Geometry Zoom Seminar, held online
Dec 2022	<i>Surgery on Riemannian Manifolds of Positive Ricci Curvature</i> Conference: Young Mathematicians in Geometry and Analysis, Université de Haute-Alsace (UHA), Mulhouse
Nov 2022	<i>Generalized Surgery on Riemannian Manifolds of Positive Ricci Curvature</i> Geometry and Topology Seminar, Durham University
Feb 2022	<i>Generalized Surgery on Riemannian Manifolds of Positive Ricci Curvature and Applications in Dimension 6</i> Irish Geometry Seminar, held online
Mar 2021	<i>Generalized Surgery on Riemannian Manifolds of Positive Ricci Curvature</i> Oregon Topology/Geometry Zoom Seminar, held online
Jan 2021	<i>Positive Ricci Curvature and Surgery</i> Augsburg-Fribourg-Karlsruhe (A-Fri-Ka) Riemannian Topology Research Seminar, held online
Jan 2020	<i>Moduli Spaces of Riemannian Metrics with Positive Scalar Curvature on Topological Spherical Space Forms</i> Geometry and Topology Seminar, Durham University

Oct 2019 | *Moduli Spaces of Riemannian Metrics with Positive Scalar Curvature on Topological Spherical Space Forms*
Topology Seminar, University of Fribourg

8. CONTRIBUTED TALKS

Aug 2023 | *Positive intermediate Ricci curvature, surgery and Gromov's Betti number bound*
Workshop: Curvature and Global Shape, University of Münster

Jun 2021 | *Positive Ricci Curvature and Generalized Surgery*
Workshop: Analysis, Geometry and Topology of Positive Scalar Curvature Metrics, Oberwolfach

9. TEACHING EXPERIENCE

Feb 2024 - | Lecture: *Algebra and Geometry II*, Teaching Assistant
May 2024 | University of Fribourg

Sep 2023 - | Proseminar: *Knot Theory*, Lecturer
Dec 2023 | University of Fribourg

Feb 2023 - | Lecture: *Linear Algebra II*, Teaching Assistant
May 2023 | University of Fribourg

Sep 2022 - | Lecture: *Linear Algebra I*, Teaching Assistant
Dec 2022 | University of Fribourg

Apr 2022 - | Seminar: *Lie Groups*, Lecturer
Jun 2022 | Maynooth University

Mar 2019 - | Mini Lecture Series (4 sessions): *Spaces and Moduli Spaces of Riemannian Metrics with*
Apr 2019 | *Positive Scalar Curvature*, Lecturer
Shanghai Jiao Tong University

Oct 2018 - | Lecture: *Linear Algebra I*, Tutor
Feb 2019 | Karlsruhe Institute of Technology

Apr 2018 - | Lecture: *Introduction to Algebra and Number Theory*, Tutor
Sep 2018 | Karlsruhe Institute of Technology

Oct 2017 - | Lecture: *Analysis I*, Tutor
Mar 2018 | Karlsruhe Institute of Technology

Oct 2016 - | Lecture: *Analysis III*, Tutor
Mar 2017 | Karlsruhe Institute of Technology

Apr 2016 - | Lecture: *Analysis II*, Tutor
Sep 2016 | Karlsruhe Institute of Technology

Oct 2015 - | Lecture: *Analysis I*, Tutor
Mar 2016 | Karlsruhe Institute of Technology

10. EXTENDED VISITS

Jul 2024 | University of Münster
Visiting Dr. Masoumeh Zarei

Mar 2022 - | Maynooth University
Jun 2022 | Visiting Prof. David Wraith

Dec 2019 -	Durham University
Oct 2020	Visiting Prof. Fernando Galaz-García
Feb 2019 -	Shanghai Jiao Tong University
Aug 2019	Visiting Prof. Yihu Yang

11. SERVICE

Jan 2024	Member of the departmental advisory group for the hiring of a professor in mathematics University of Fribourg
Nov 2023	Co-organiser of the workshop <i>Riemannian Topology Meeting</i> University of Fribourg
Oct 2020 - Sep 2021	Speaker of the Ph.D. Students of the RTG 2229 “Asymptotic Invariants and Limits of Groups and Spaces” Karlsruhe Institute of Technology

12. CONFERENCES ATTENDED

Nov 2023	<i>Riemannian Topology Meeting</i> University of Fribourg
Aug 2023	<i>Curvature and Global Shape</i> University of Münster
Jul 2023	<i>Modern Techniques in Riemannian Geometry 2023</i> Universidad Nacional Autónoma de México (UNAM), participated online
Jun 2023	<i>Geometry and analysis of groups and manifolds</i> De Giorgi Center, SNS Pisa
Dec 2022	<i>Young Mathematicians in Geometry and Analysis</i> Université de Haute Alsace (UHA), Mulhouse
Aug 2022	<i>Metric Measure Spaces with Symmetry and Lower Ricci Curvature Bounds</i> Casa Matemática Oaxaca, participated online
May 2022	<i>Groups in Galway meets the Irish Geometry Conference</i> National University of Ireland, Galway
Aug 2021	<i>Curvature and Global Shape</i> University of Münster
Jun 2021	<i>Analysis, Geometry and Topology of Positive Scalar Curvature Metrics</i> Oberwolfach
Aug 2020	<i>Virtual Workshop on Ricci and Scalar Curvature in Honor of Misha Gromov’s 75th Birthday</i> held online
Sep 2019	<i>Student Conference of the DMV Annual Meeting</i> Karlsruhe
Nov 2018	<i>Riemannian Topology Meeting</i> University of Fribourg