Curriculum Vitae
Sebastian W. Hensel

Personal Information

Nationality: German
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80333 München
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Education

1996-2005: erzbischöfliches St. Ursula-Gymnasium Brühl,
Degree: Abitur (1,0)

University Education

December 2017: Habilitation in mathematics at Rheinische Friedrich-Wilhelms-Universität Bonn

December 2011: PhD in mathematics at Rheinische Friedrich-Wilhelms-Universität Bonn (*magna cum laude*).

October 2008: Diplom in mathematics at Rheinische Friedrich-Wilhelms-Universität Bonn (1,0)

Scholarships

- Research Member, MSRI program "Random and Arithmetic Structures in Topology", 2020
- Postdoctoral Fellowship am Mittag-Leffler Institut, Stockholm, January to May 2012
- Max-Planck IMPRS Promotionsstipendium 2008-2011
- Studienstiftung des Deutschen Volkes 2005-2008

Employments

- Professor in pure mathematics (W2), LMU München, tenure track 2018-2023, permanent since 2023.
- Akademischer Rat auf Zeit, Universität Bonn, 2015-2018.
- L.E. Dickson Instructor, University of Chicago, 2012-2015.

Grants

- Since 2020: Project "Geometry of Surface Homeomorphism Groups" (with Jonathan Bowden), part of DFG SPP 2026 "Geometry at Infinity"
- Conference "Groups and Dynamics in Geometry" (together with Mladen Bestvina, Alessandra Iozzi, Howard Masur, Bram Petri und Beatrice Pozzetti), moved to 2023

Teaching Experience

– Teaching at LMU München (since 2018):

Summer semester 2018	Lecture "Geometrie und Topologie von Flächen"
	Seminar "Hyperbolische Flächen"
Winter semester 2018/19	Lecture "Differentiable Manifolds"
Summer semester 2019	Lecture "Riemannian Geometry"
	Lecture "Mapping Class Groups"
Winter semester 2019/20	Lecture "Topologie I"
	Seminar "Randomness and geometry of groups" (with M. Heydenreich)
Summer semester 2020	Lecture "Topologie II"
	Seminar "Geometric Group Theory"
	Seminar "Curve Graphs and Hierarchies"
Summer semester 2021	Lecture "Geometric Group Theory"
	Seminar "Teichmüller Theory"
Winter semester 2021/22	Lecture "3-manifolds"
	Seminar "Flächen, topologisch, algebraisch und geometrisch"
	Seminar "Circle Packings" (with M. Heydenreich)
Summer semester 2022/23	Lecture "Elementary Geometry"
	Lecture "Kleinian Groups"
Winter semester 2022/23	Lecture "Differentiable Manifolds"
	Lecture "Global Riemannian Geometry"
Summer semester 2023	Lecture "Riemannian Geometry"
Winter semester 2023/24	Lecture "Geometric Group Geometry"
Summer semester 2024	Lecture "Geometry"
Winter semester 2024/25	Lecture "Topology II"
Summer semester 2025	Lecture "Introduction to TeichmÃ¼ller theory"

– 2015–2017 Teaching at Universität Bonn (3 lectures: Teichmüller theory, geometric group theory I & II)
– 2012–2015 Teaching at the University of Chicago (in total 9 courses of the "Analysis in $\mathbb{R}^n$" sequence)

Advising

– 13 Master's theses (4 in Bonn, 9 at LMU München), currently five in progress.
– 32 Bachelor's theses (at LMU München), two in progress.
– 2 PhD students (at LMU München) in progress (with preliminary topics "Geometry of point-pushing maps", "Connectivity properties of the boundary of the disk graph")

International Conferences (as invited speaker)

- ICMAT Advanced School on Mapping Class Groups, Surface Subgroups, Bundles, and Group Extensions (2025)
- Huge Groups (2023, CRM Montreal)
- Mapping Class Groups and Out(F_n) (2022, IHP Paris)
- Knots, Surfaces and 3-Manifolds (2021, Banff, virtual)
- Cornell Topology Festival 2021 (Cornell, virtual)
- DMV-Tagung 2019 (Geometry Section)
- Groups with hyperbolic features (2019, ETH Zürich)
- GAGTA 2018 (Seoul)
- Geometry of outer spaces and outer automorphism groups (2018, Warwick University)
- Manifolds and Groups (2017, Regensburg)
- Sixth Ahlfors-Bers-Colloquium (2014, Yale University)
- GEAR Junior Retreat (2014, Ann Arbor)
- Joint Mathematics Meetings 2014 (Special Session on Geometric Group Theory)
- Fifth Ahlfors-Bers Colloquium (2011, Rice University)

Colloquia and Seminars (as invited speaker)

- *Austria*: Universität Wien
- *Canada*: McGill University
- *France*: Paris-Est Creteil, Sorbonne, Orsay (2 times)
- *Germany*: Universität Augsburg, Universität Bielefeld, Rheinische Friedrich-Wilhelms-Universität Bonn (5 times), Universität Heidelberg, KIT (2 times), Christian-Albrechts-Universität Kiel, Universität Regensburg (3 times)
- *Luxembourg*: Universite du Luxembourg
- *Netherlands*: Utrecht University
- *Poland*: University of Warsaw
- *Sweden*: Mittag-Leffler Institute, Stockholm University
- *Switzerland*: Universite de Lausanne
- *UK*: University of Cambridge, University of Glasgow (3 times), University of Warwick (2 times)
- *USA*: Boston College, Caltech, Columbia University, Cornell University, University of Chicago (4 times), Rice University, University of Illinois Chicago, University of Utah (5 times)

Publications

30. *Multitwists in big mapping class groups*, with Federica Fanoni and George Domat, Algebraic & Geometric Topology 25 (2025) 3921–3929
29. *Rigidity of the Torelli subgroup in Out(F_N)*, with Camille Horbez and Richard Wade, Rev. Mat. Iberoam. 41 (2025), no. 1, pp. 73–112

28. *Path-connectivity of the set of uniquely ergodic and cobounded foliations* with Jon Chaika, Geom Dedicata 218, 109 (2024)
27. *Linear Progress in Fibres*, with Vaibhav Gadre, Groups Geom. Dyn. 18 (2024), no. 3, pp. 1099–1129
26. *Strong Haken via Sphere Complexes*, with Jennifer Schultens, Algebraic & Geometric Topology 24-5 (2024), 2707–2719.
25. *Connectivity of the Gromov Boundary of the Free Factor Complex*, with Mladen Bestvina and Jon Chaika, Annales Henri Lebesgue, Volume 6 (2023), pp. 1291-1348.
24. *A projection from filling currents to Teichmüller space*, with Jenya Sapir, Proc. Amer. Math. Soc. 151 (2023), 3621–3633
23. *Rotation Sets and Actions on Curves*, with Jonathan Bowden, Kathryn Mann, Emmanuel Militon, and Richard Webb, 2021, Advances in Mathematics, Volume 408, Part B, 2022.
22. *Foliations from left orders* with Hyungryul Baik und Chenxi Wu, J. Korean Math. Soc. 2022; 59(4): 699-715.
21. *Quasi-morphisms on surface diffeomorphism groups*, with Jonathan Bowden and Richard Webb, Journal of the American Mathematical Society, Volume 35 (2022), 211-231.
20. *Handlebody Bundles and Polytopes* with Dawid Kielak, Algebraic & Geometric Topology 21-7 (2021), pp. 3445–3458.
19. *Big mapping class groups acting on homology* with Federica Fanoni and Nick Vlamis, Indiana Univ. Math. J. 70 (2021), 2261-2294
18. *(Un)distorted stabilisers in the handlebody group*, Journal of Topology, Volume 14, Issue 2, June 2021, pp. 460–487.
17. *The geometry of the handlebody groups II: Dehn functions*, with Ursula Hamenstädt, Michigan Math. J. 70(1), pp. 23-53 (March 2021).
16. *A Primer on Handlebody Groups*, Handbook of Group Actions (Vol. V), ALM 48, 2020, Ch.4, pp. 143–177
15. *The set of uniquely ergodic IETs is path-connected*, with Jon Chaika, Ergodic Theory and Dynamical Systems, Volume 39, Issue 2 February 2019, pp. 311-356.
14. *Rigidity and Flexibility for the handlebody group*, Commentarii Mathematici Helvetici, Volume 93, Issue 2, 2018, pp. 335–358.
13. *Exponential Torsion Growth for random 3-manifolds*, with Hyungryul Baik, David Bauer, Ilya Gekhtman, Ursula Hamenstädt, Thorben Kastenholz, Bram Petri, Daniel Valenzuela, 2016, arXiv:1607.00631, International Mathematics Research Notices, Vol. 2018, Issue 21, 2018, pp. 6497–6534
12. *Nielsen realisation for untwisted automorphisms of right-angled Artin groups*, with Dawid Kielak, Proceedings of the London Mathematical Society, Vol. 117, Issue 5, 2018, pp. 901–950.

11. *Stability in Outer Space*, with Ursula Hamenstädt, Groups, Geometry, and Dynamics, Vol. 12, Issue 1, 2018, pp. 359–398.
10. *Relative Nielsen Realisation by Gluing: Limit Groups and Free Products*, with Dawid Kielak. Michigan Journal of Mathematics, Vol. 67, Issue 1 (2018), pp.199–223.
9. *Moving homology classes in finite covers of graphs*, with Benson Farb. Israel Journal of Mathematics, Vol. 220, Issue 2 (2017), pp. 605–615
8. *Finite covers of graphs, their primitive homology, and representation theory*, with Benson Farb. New York Journal of Mathematics, Vol. 22 (2016), pp. 1365–1391
7. *1-slim triangles and uniform hyperbolicity for arc and curve graphs*, with Piotr Przytycki and Richard Webb. Journal of the European Mathematical Society, Volume 17, Issue 4 (2015), pp. 755–762.
6. *Spheres and projections for* $\mathrm{Out}(F_n)$,
with Ursula Hamenstädt, 2011. Journal of Topology 8 (2015), 65-92.
5. *Realisation and dismantlability*, with Damian Osajda and Piotr Przytycki. Geometry & Topology 18 (2014) 2079–2126.
4. *Isoperimetric inequalities for the handlebody groups*, with Ursula Hamenstädt. Transactions of the American Mathematical Society 365 (2013), 5313-5327.
3. *The geometry of the handlebody groups I: Distortion*, with Ursula Hamenstädt. Journal of Topology and Analysis, Volume 4, Issue 1 (2012).
2. *The ending lamination space of the five-punctured sphere is the Nöbeling curve* with Piotr Przytycki,
J. London Math. Soc. 84(1) (2011), 103–119.
1. *Iterated grafting and holonomy lifts of Teichmüller space.* Geometria Dedicata, Volume 155, Number 1 (2011), 31–67.

Preprints

- *Rotation sets and axes in the fine curve graph for torus homeomorphisms*, with Frédéric Le Roux, 2025.
- *Ergodic Measures in Strata*, with Mladen Bestvina and Jon Chaika, 2025.
- *Path-connectivity of Thick Laminations, and Markov Processes with Thick Limit Sets*, with Jon Chaika, 2025.
- *From curve graphs to fine curve graphs and back*, with Federica Fanoni, 2025.
- *Towards the boundary of the fine curve graph*, with Jonathan Bowden and Richard Webb, 2024.
- *Measure equivalence rigidity of the handlebody groups*, with Camille Horbez, 2021.
- *Homological Approximations to the Handlebody Group*, 2017