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### Education

- 2010–2014 PhD in Mathematics at the University of Bern advised by Prof. Dr. Sebastian Baader.  
2008–2010 MSc in Mathematics at the University of Bern.  
2005–2008 BSc in Mathematics at the University of Bern. Minors: Physics and Philosophy.

### Professional Experience

- 2017–now Postdoctoral Fellow at the Swiss Federal Institute of Technology in Zürich.  
2016–2017 Postdoctoral Fellow at the Max Planck Institute for Mathematics in Bonn.  
2014–2016 Postdoctoral Fellow at Boston College, supported by the SNSF Project 155477.  
2010–2014 Teaching Assistant Coordinator at the Mathematical Institute of the University of Bern.  
2007–2014 Teaching Assistant at the Mathematical Institute of the University of Bern.

### Activities and Memberships

Reviewer for *Zentralblatt MATH*. Referee for peer reviewed journals. Member of the *Swiss Mathematical Society*. Organizer of the Max Planck Institute for Mathematics' conference *4-manifolds and knot concordance* in 2016 and *Swiss Knots* in 2017. Member of the Faculty of Natural Science Board of the University of Bern as representative for PhD candidates in Mathematics, Mathematical Statistics, and Computer Science in the academical year 2011/2012.

### Awards and Grants

- 2015 Research grant and invitation as a research fellow to the Max Planck Institute for Mathematics in Bonn for the academical year 2016/2017.  
2014 Swiss National Science Foundation *Early Postdoc.Mobility*-Grant. Project 155477.  
2011 Faculty prize for the Master Thesis *Konstruktion von Elementen in Homotopiegruppen von Sphären* awarded by the Faculty of Natural Sciences of the University of Bern.

### Invited talks at conferences, seminars, and colloquia

- 2018 Algebraic Geometry Seminar, University of Basel. Oberseminar Topologie, Max Planck Institute for Mathematics, Bonn. Ergodic and Geometric Group Theory Seminar, EPF Lausanne. Geometry and Topology Seminar, Boston College. Topology and Geometry Seminar, University of Neuchatel. Knotted embeddings in dimensions 3 and 4, conference of the thematic month on low dimensional topology and related topics, CIRM, Luminy. Winter Braids VIII, conference of the thematic month on low dimensional topology and related topics, CIRM, Luminy.

- 2017 Geometry and Topology Seminar, University of Geneva. Knot Theory Seminar, University of Warsaw. Geometry and Topology Seminar, Durham University. Seminar of SFB1085: Higher Invariants—Interactions between arithmetic geometry and global analysis, University of Regensburg. Mathematical Colloquium, University of Hamburg. Number Theory and Algebraic Geometry Seminar, Boston College. Topology Seminar, UQAM, Montreal. Topology Seminar, Indiana University. Topology Seminar, Princeton University. Geometry, Dynamics, and Topology Seminar, Aix-Marseille University. Oberseminar Geometrie, LMU München. Oberseminar, Max Planck Institute for Mathematics, Bonn.
- 2016 Algebra and Geometry Seminar, University of Basel. Topology Seminar, Max Planck Institute for Mathematics, Bonn. 12th William Rowan Hamilton Geometry and Topology Workshop, Trinity College, Dublin. Geometry and Topology Seminar, University of California, Davis. Topology Seminar, University of Georgia, Athens. Synchronizing Smooth and Topological 4-Manifolds, BIRS workshop. Geometry and Topology Seminar, Boston College. Topology Seminar, Princeton University.
- 2015 Mathematical Colloquium, University of Bern. Knots in Washington XLI, George Washington University. Topology Seminar, Rice University, Houston. American Mathematical Society Central Fall Sectional Meeting, Rutgers University. Caltech Geometry and Topology Seminar, Pasadena. American Mathematical Society Central Fall Sectional Meeting, Loyola University, Chicago. 11th William Rowan Hamilton Geometry and Topology Workshop, Trinity College, Dublin. Swiss Knots 2015, University of Geneva. Mathematics Seminar of the Montana State University, Bozeman. Topology Seminar, Syracuse University. Topology Seminar, Brandeis University, Waltham.
- 2014 Topology Seminar, University of Texas, Austin. Geometry and Topology Seminar, Boston College. Winter Braids IV, University of Burgundy, Dijon.
- 2013 Dynamical Systems and Geometry Seminar, Warsaw University. Low-dimensional Topology and Geometry in Toulouse, University of Toulouse.
- 2012 Algebra and Geometry—Workshop of the Swiss Doctoral Program in Mathematics, University of Bern.
- 2011 Knot Theory Seminar, University of Geneva. 8th Graduate Colloquium of the Swiss Doctoral Program in Mathematics, University of Basel.

## Publications and Preprints

- 2018 with L. Lewark and A. Lobb. Almost positive links are strongly quasipositive. *ArXiv e-print*. ArXiv:1809.06692 [math.GT].  
with M. Borodzik. Up to topological concordance links are strongly quasipositive. *ArXiv e-print*. ArXiv:1802.02493 [math.GT].
- 2017 with M. Klug, T. Schirmer, and D. Zemke. Calculating the homology and intersection form of a 4-manifold from a trisection diagram. *Proc. Natl. Acad. Sci. USA*, special feature. DOI: 10.1073/pnas.1717176115. ArXiv:1711.04762 [math.GT].  
with D. Hubbard. Braids with as many full twists as strands realize the braid index. *ArXiv e-print*. ArXiv:1708.04998 [math.GT].
- 2016 with L. Lewark. On classical upper bounds for slice genera. *Selecta Math.*, available online (2018). DOI: 10.1007/s00029-018-0435-x. ArXiv:1611.02679 [math.GT].  
with S. Baader, L. Lewark, and R. Zentner. Khovanov width and dealternation number of positive braid links. *Math. Res. Lett.*, accepted for publication. ArXiv:1610.04534 [math.GT].  
with I. van Santen né Stampfli. Uniqueness of embeddings of the affine line into algebraic groups. *J. Algebraic Geom.*, accepted for publication. ArXiv:1609.02113 [math.AG].

- with J. Park and A. Ray. On the Upsilon invariant and satellite knots. *Math. Z.*, available online (2018). DOI: 10.1007/s00209-018-2145-7. ArXiv:1604.04901 [math.GT].
- with D. Kratovich. On cobordisms between knots, braid index, and the Upsilon-invariant. *Math. Ann.*, 369 (2017), no. 1-2, 301-329. DOI: 10.1007/s00208-017-1519-1. ArXiv:1602.02637 [math.GT].
- 2015 with S. Baader, L. Lewark, and L. Liechi. On the topological 4-genus of torus knots. *Trans. Amer. Math. Soc.*, 370 (2018), no. 4, 2639–2656. ArXiv:1509.07634 [math.GT].
- with S. Pohlman and R. Zentner. Alternation numbers of torus knots with small braid index. *Indiana Univ. Math. J.*, 67 (2018), no. 2, 645–655. ArXiv:1508.05825 [math.GT].
- with D. McCoy. On 2-bridge knots with differing smooth and topological slice genera. *Proc. Amer. Math. Soc.* 144 (2016), 5435–5442. DOI: 10.1090/proc/13147. ArXiv:1508.01431 [math.GT].
- A sharp signature bound for positive four-braids. *Q. J. Math.*, 69 (2018), no. 1, 271–283. DOI: 10.1093/qmath/hax036/4097999. ArXiv:1508.00418 [math.GT].
- The degree of the Alexander polynomial is an upper bound for the topological slice genus. *Geom. Topol.* 20 (2016), no. 3, 1763–1771. DOI: 10.2140/gt.2016.20.1763. ArXiv:1504.01064 [math.GT].
- Optimal cobordisms between torus knots. *Comm. Anal. Geom.* 24 (2016), no. 5, 993–1025. DOI: 10.4310/CAG.2016.v24.n5.a4. ArXiv:1501.00483 [math.GT].
- 2014 with I. van Santen né Stampfli. Holomorphically equivalent algebraic embeddings. *ArXiv e-print*. ArXiv:1409.7319 [math.AG].
- with L. Liechi. Signature and the Alexander polynomial. Appendix to L. Liechi’s Signature, positive Hopf plumbing and the Coxeter transformation. *Osaka J. Math.* 53 (2016), no. 1, 251–266. ArXiv:1401.5336 [math.GT].
- 2013 The signature of positive braids is linearly bounded by their first Betti number. *Internat. J. Math.* 26 (2015), no. 10, 1550081. DOI: 10.1142/S0129167X15500810. ArXiv:1311.1242 [math.GT].
- Gordian adjacency for torus knots. *Algebr. Geom. Topol.* 14 (2014), no. 2, 769–793. DOI: 10.2140/agt.2014.14.769. ArXiv:1301.5248 [math.GT].