Matthias Nagel

Positions

Sep 19 – **Postdoctoral Position**, *ETH Zürich*, Switzerland.

Aug 18 – Aug 19 **Postdoctoral Fellowship**, *University of Oxford*, United Kingdom.
- Research Associate at Keble College, Jan 19 – Aug 19

Sep 17 –Jul 18 **Britton Fellow**, *McMaster University*, Canada.

Sep 15 – Aug 17 **CIRGET Postdoctoral Fellowship**, *McGill University*, Canada.

Education

Sep 12 – Aug 15 **Doctorate**, *Mathematics*, Universität Regensburg and Universität zu Köln.
- under supervision of Stefan Friedl
- on *Surfaces of minimal complexity in low-dimensional topology*

Apr 07 – Feb 12 **Diplom**, *TU Kaiserslautern*.

Research stays

Sep 16 – Dec 16 **HIM**, *Junior Hausdorff Trimester Program "Topology"*, Bonn.

May 16 **University of Glasgow**, *McGill – Glasgow Travel Award*, United Kingdom.

Publications

[1] A. Conway and M. Nagel. *Stably slice disks of links*. 2019. arXiv: 1901.01393.

[2] S. Friedl, M. Nagel, P. Orson, and M. Powell. *A survey of the foundations of four-manifold theory in the topological category*. 2019. arXiv: 1910.07372.

[3] S. Friedl, M. Nagel, P. Orson, and M. Powell. "Satellites and concordance of knots in 3-manifolds". *Trans. Amer. Math. Soc.* 371.4 (2019), pp. 2279–2306. arXiv: 1611.09114.

[4] A. Conway, M. Nagel, and E. Toffoli. *Multivariable signatures, genus bounds and 0.5-solvable cobordisms*. accepted in Mich. Math. J. 2018. arXiv: 1703.07540.

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[5] C. Davis, M. Nagel, J. Park, and A. Ray. "Concordance of knots in $S^1 \times S^2$". *J. Lond. Math. Soc.* 98.1 (2018), pp. 59–84. arXiv: 1707.04542.

[6] S. Friedl, T. Kitayama, and M. Nagel. "Representation varieties detect essential surfaces". *Math. Res. Lett.* 25.3 (2018), pp. 803–817. arXiv: 1604.00584.

[7] H. Boden and M. Nagel. "Concordance group of virtual knots". *Proc. Amer. Math. Soc.* 145.12 (2017), pp. 5451–5461. arXiv: 1606.06404.

[8] C. Davis, M. Nagel, P. Orson, and M. Powell. *Triple linking numbers and surface systems*. accepted in Indiana Univ. Math. J. 2017. arXiv: 1709.08478.

[9] S. Friedl, T. Kitayama, and M. Nagel. "A note on the existence of essential tribranched surfaces". *Topology Appl.* 225 (2017), pp. 75–82. arXiv: 1505.01806.

[10] S. Friedl, C. Leidy, M. Nagel, and M. Powell. "Twisted Blanchfield pairings and decompositions of 3-manifolds". *Homology Homotopy Appl.* 19.2 (2017), pp. 275–287. arXiv: 1602.00140.

[11] M. Nagel, P. Orson, J. Park, and M. Powell. *Smooth and topological almost concordance*. accepted in Int. Math. Res. Notices. 2017. arXiv: 1707.01147.

[12] M. Nagel and M. Powell. "Concordance invariance of Levine-Tristram signatures of links". *Doc. Math.* 22 (2017), pp. 25–43. arXiv: 1608.02037.

[13] M. Nagel. "Minimal genus in circle bundles over 3-manifolds". *Journal of Topology* 9.3 (2016), pp. 747–773. arXiv: 1410.4018.

[14] S. Friedl and M. Nagel. "3-Manifolds that can be made acyclic". *Int. Math. Res. Not.* 2015.24 (2015), pp. 13360–13378. arXiv: 1412.4280.

[15] S. Friedl and M. Nagel. "Twisted Reidemeister torsion and the Thurston norm: graph manifolds and finite representations". *Illinois J. Math.* 59.3 (2015), pp. 691–705. arXiv: 1503.07251.

[16] M. Nagel and B. Owens. "Unlinking information from 4-manifolds". *Bull. London Math. Soc.* 47.6 (2015), pp. 964–979. arXiv: 1503.03092.

[17] S. Friedl, M. Nagel, and M. Powell. "A specious unlinking strategy". *Period. Math. Hung.* 69.2 (2014), pp. 207–210. arXiv: 1410.2052.

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Teaching & Service

Math 1ZC3 Linear Algebra, Winter 2018
McMaster University, Canada

Math 731 Algebraic Topology, Fall 2017
McMaster University, Canada

Math 123 Linear Algebra and Probability, Winter 2017
McGill University, Canada

Math 381 Complex Variables for Engineers, Winter 2016
McGill University, Canada

Seminars
- Instantons and 4–manifolds
- Lightbulbs in dimension 3 and 4
- Seiberg-Witten and stable homotopy theory
- Heegaard-Floer homology

Referee
- Bulletin of the LMS, Compositio Mathematica, New York Journal of Mathematics
- Quick Opinions: Canadian Journal of Mathematics, Michigan Math Journal

Talks

2019
- *The Thurston norm and taut foliations*
  "Workshop on Foliations"
  University of Regensburg, Germany
- *Concordance and linear independence of strongly quasi-positive knots*
  Workshop "Low-Dimensional Topology Workshop 2019"
  University of Regensburg, Germany
- *Slice disks in stabilized 4-balls*
  Conference "Knot concordance and low-dimensional manifolds"
  Le Croisic, France
- *Essential surfaces and how to find them*
  Durham University, United Kingdom
- *Links between dimension three and four*
  University of Vienna, Austria

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2018
- *Slice disks in stabilized 4-balls*
  Twisted and Quantum knot invariants
  Durham University, United Kingdom
- *Links between dimensions three and four*
  University of Toronto, Canada
- *Surface systems and triple linking numbers*
  University of Waterloo, Canada
- *Surface systems and triple linking numbers*
  Michigan State University, United States
- *Surface systems and triple linking numbers*
  Boston College, United States
- *Links between dimensions three and four*
  Melbourne University, Australia

2017
- *Multivariable signatures, genus bounds, and 0.5–solvable cobordisms*
  Max Planck Institute for Mathematics, Germany
- *Surface systems and triple linking numbers*
  Universität Regensburg, Germany
- *Surface systems and triple linking numbers*
  LMU München, Germany
- *Triple linking numbers and surface systems*
  UT Austin, United States
- *Triple linking numbers and surface systems*
  AMS Sectional meeting at Buffalo, United States
- *Milnor's triple linking numbers*
  Indiana University Bloomington, United States
- *Milnor's triple linking numbers and C-complexes*
  Université de Genève, Switzerland
- *Knots and Covers*
  University of Copenhagen, Denmark

2016
- *Concordance invariance of Levine-Tristram signatures of links*
  Universität zu Köln, Germany
- *Representation varieties and essential surfaces*
  University of Edinburgh, United Kingdom
- *Representation varieties and essential surfaces*
  Scottish Topology Seminar, United Kingdom
- *Twisted Reidemeister torsion and the Thurston norm*
  McMaster University, Canada
- *Minimal genus in circle bundles over 3-manifolds*
  UQÀM, Canada

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2015
- *Twisted Reidemeister torsion and the Thurston norm*
  Université de Genève, Switzerland
- *Turning 3-manifolds acyclic*
  McGill University, Canada
- *Minimal genus in circle bundles over 3-manifolds*
  Rényi Institute, Hungary

Languages

German	native
English	fluent
French	basic

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