

Gabriel Angelini-Knoll

Curriculum Vitae

Department of Mathematics Institut Galilée
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Education

Wayne State University: Ph.D. in Mathematics, summa cum laude, 2017. Advisor: Andrew Salch.

Wayne State University: M.A. in Mathematics, summa cum laude, 2013.

Kalamazoo College: B.A. in Mathematics, B.A. in Psychology, cum laude, 2011.

Employment

Université Sorbonne Paris Nord, Postdoctoral Fellow, 2022 - present

Freie Universität Berlin, Postdoctoral Researcher, 2019 - 2022.

Michigan State University, Postdoctoral Researcher, 2017 - 2019.

Research interests

Algebraic topology: chromatic homotopy, K-theory, equivariant homotopy, and Hochschild homology.

Publications

PUBLISHED AND ACCEPTED

Gabriel Angelini-Knoll. Complex orientations and TP of complete discrete valuation rings. To appear in *Homol. Homotopy Appl.* [arXiv:2104.07306](https://arxiv.org/abs/2104.07306).

Gabriel Angelini-Knoll. On topological Hochschild homology of the $K(1)$ -local sphere. *J. Topol.* (2021) 14: 258-290. doi.org/10.1112/topo.12182.

Gabriel Angelini-Knoll and J.D. Quigley. The Segal Conjecture for topological Hochschild homology of Ravenel spectra. *J. Homotopy Relat. Struct.* (2021) 16: 41-60. doi.org/10.1007/s40062-021-00275-7.

Gabriel Angelini-Knoll and Andrew Salch. A May-type spectral sequence for higher topological Hochschild homology. *Algebr. Geom. Topol.* (2018) 18 no. 5, 2593-2660. msp.org/agt/2018/18-5/p03.xhtml.

SUBMITTED

Gabriel Angelini-Knoll. Detecting β elements in iterated algebraic K-theory of finite fields. Under revision for *Transactions of the AMS*. [arXiv:1810.10088](https://arxiv.org/abs/1810.10088).

Gabriel Angelini-Knoll and J.D. Quigley. Chromatic complexity of the algebraic K-theory of the Thom spectra $y(n)$. Under revision for Ann. of K-thy. [arXiv:1908.09164](https://arxiv.org/abs/1908.09164).

Gabriel Angelini-Knoll and Andrew Salch. Commuting unbounded homotopy limits with Morava K-theory. Under revision for Math. Z. [arXiv:2003.03510](https://arxiv.org/abs/2003.03510).

Gabriel Angelini-Knoll, Dominic Leon Culver, and Eva Höning. Topological Hochschild homology of truncated Brown-Peterson spectra I. Under revision for Algebr. Geom. Topol.. [arXiv:2106.06785](https://arxiv.org/abs/2106.06785).

Gabriel Angelini-Knoll, Teena Gerhardt, and Mike Hill. Real topological Hochschild homology via the norm and Real Witt vectors. Submitted to Adv. Math. for Initial Review. [arXiv:2111.06970](https://arxiv.org/abs/2111.06970).

Gabriel Angelini-Knoll, Christian Ausoni, Dominic Culver, Eva Höning, and John Rognes. Algebraic K-theory of elliptic cohomology. Submitted to Acta Math. for Initial Review. [arXiv:2204.05890](https://arxiv.org/abs/2204.05890)

IN PROGRESS

Gabriel Angelini-Knoll, Mona Merling, and Maximilien Péroux. Homology of Twisted G-rings. In progress.

Gabriel Angelini-Knoll, Jeremy Hahn, and Dylan Wilson. Syntomic cohomology of Morava K-theory. In progress.

Gabriel Angelini-Knoll, Mark Behrens, Eva Belmont, and Hana Kong. A deformation of Borel C_p -equivariant homotopy. In progress.

Talks

INVITED SEMINAR TALKS

Université Sorbonne Paris Nord, Algebraic Topology Seminar, 2022.

Electronic Computational Homotopy Theory Seminar, 2022.

University of California, San Diego, Topology Seminar, 2022.

University of Pennsylvania, Geometry and Topology Seminar, 2021.

University of Warwick, Topology Seminar, 2021.

École polytechnique fédérale de Lausanne, Topology Seminar, 2020.

Massachusetts Institute of Technology, Topology Seminar, 2020.

Equivariant Stable Homotopy Theory and p-adic Hodge Theory, BIRS, 2020.

Freie Universität Berlin, Topology Seminar, 2019.

University of California Los Angeles, Algebraic Topology Seminar, 2019.

University of Illinois Urbana-Champaign, Topology Seminar, 2019.

Northwestern University, Topology Seminar, 2019.

Electronic Computational Homotopy Theory Seminar, 2019

University of Kentucky, Topology Seminar, 2017.

Johns Hopkins University, Topology Seminar, 2017.

University of Chicago, Topology Seminar, 2017.

University of Notre Dame, Topology Seminar, 2016.

Michigan State University, Topology Seminar, 2016.

Indiana University, Topology Seminar, 2016.
University of Illinois Urbana-Champaign, Topology Seminar, 2016.
Ohio State University, K-theory Seminar, 2016.

INVITED CONFERENCE TALKS

AIM Workshop on Equivariant Techniques in Stable Homotopy theory, 2021.
Equivariant Stable Homotopy Theory and p-adic Hodge Theory, BIRS, 2020.
LG&TBQ Conference at University of Michigan, 2019.
AMS Sectional, University of Hawaii at Manoa, 2019.
Transatlantic Transchromatic Homotopy theory conference, University of Regensburg, 2017.
AMS Sectional, Ohio State University, 2018.
AMS Sectional: Bloomington, Indiana, 2017.
Midwest Topology Conference, Wayne State University, 2017.

INVITED TALKS FOR AN UNDERGRADUATE AUDIENCE.

SURIEM (REU), Michigan State University, 2018.
Math Club, University of Kentucky, 2017.
Undergraduate mathematics seminar, Kalamazoo College, 2014.

Service

CONFERENCE ORGANIZER

Mini-Symposium: Advances in K-Theory, Symmetry, and Periodicity, DMV Berlin, 2022

AMS Special Session: Homotopy theory (with T. Gerhardt and B. Guillou), UW Madison, 2019.

Midwest Topology Conference (with T. Gerhardt, M. Hedden, and K. Hendricks), Michigan State University, 2019.

REFEREE

Referee for *Annals of K-Theory*, *International Mathematics Research Notices*, *Journal of Topology*, *Tbilisi mathematical journal*, and *Transactions of the American Mathematical Society*,

Reviewer for *MathSciNet* and *zbMATH*.

MASTERS THESIS ADVISOR

Lucas Piessevaux, Title: Deformations of stable homotopy, Freie Universität Berlin, 2022.

Ferry Saavedra (with H. Reich), Title: On generalized Tate cohomology, Freie Universität Berlin, 2022.

Daniel Krupa (with H. Reich), Title: ∞ -categories and K-theory. Freie Universität Berlin, 2021.

UNDERGRADUATE THESIS ADVISOR

Bachelors Thesis advisor, Sebastian Schneider, Title: Algebra via Lawverre theories, Freie Universität Berlin, 2022.

Bachelors Thesis co-advisor (with H. Reich), Vittorio Di Fraia, Title: Variation on the Little Cubes Operads and Involution Algebra Objects. Freie Universität Berlin, 2021.

UNDERGRADUATE RESEARCH PROJECT LEADER

SURIEM, mentored an REU for a team of undergraduate mathematicians from universities across the country, Michigan State University, 2019.

REU exchange program (with T. Gerhardt), mentored a student from Xi'an Jiaotong University and a student from Michigan State University in a semester long REU, 2019.

COURSE COORDINATOR

Math in Today's World: Quantitative reasoning, Wayne State University, 2013.

TEACHING MENTOR FOR GRADUATE TEACHING ASSISTANTS

Michigan State University, 2018.

Wayne State University, 2013 and 2015.

Teaching

PRIMARY INSTRUCTOR

FREIE UNIVERSITÄT BERLIN

Topology I: Point-set topology and covering space theory. Summer 2022.

Research module in Topology: Cyclic homology. Winter 2021/22.

Seminar on Algebra: Symmetries. Summer 2021.

Algebraic K-theory. Winter 2020/21.

Research module in Topology: Equivariant stable homotopy theory. Winter 2020/21.

Research module in Topology: Cohomology of Groups. Summer 2020.

Seminar on Topology: Simplicial Methods. Winter 2019/20.

MICHIGAN STATE UNIVERSITY

Algebraic Topology II: Homotopy theory. Winter 2019.

Calculus I. Fall 2018.

Abstract Algebra I and Number Theory: Ring theory. Winter 2018.

Survey of Calculus I. Fall 2017.

WAYNE STATE UNIVERSITY

Intermediate Algebra with Trigonometry. Winter 2014, Winter 2015, and Fall 2015.

Elementary Statistics. Summer 2013.

Elementary Functions: Pre-calculus. Fall 2012, Winter 2013, and Fall 2013.

Math in Today's World: Quantitative literacy. Summer 2012 and Summer 2013.

TEACHING ASSISTANT

FREIE UNIVERSITÄT BERLIN

Higher Algebra II: A course on ∞ -operads (with H. Reich). Winter 2021/22.

Higher algebra I: A course on ∞ -categories. (with H. Reich.) Summer 2021.

Topology III: Homotopy. (with H. Reich.) Summer 2020.

Topology II: Homology. (with H. Reich.) Winter 2019/20.

RESEARCH SEMINAR ORGANIZER

FREIE UNIVERSITÄT BERLIN

Hermitian K-theory Winter 2021/22, Summer 2022.

Higher symmetry. Winter 2020/21.

K-theory of pullbacks. Winter 2020/21.

Chromatic homotopy. Summer 2020.

MICHIGAN STATE UNIVERSITY

Seminar on Algebraic K-theory (co-organized with N. Grieve). Winter 2018.

Awards

The Dr. Chorng-Shi Houh Award, Wayne State University (WSU), 2017.

Rumble Fellowship, WSU, 2016.

K. W. and H. L. Folley Endowed Mathematics Scholarship, WSU, 2016.

R. and N. Irvan Endowed Scholarship in Mathematics, WSU, 2015.

The M. J. Zelonka Endowed Mathematics Scholarship, WSU, 2014.

The Alfred L. Nelson Award, WSU, 2013.

The Sheila Sparbeck Award, WSU, 2012.

Languages

English (mother tongue), Spanish (B1), German (A2), French (A1).

References

Christian Ausoni (Postdoc Mentor), Université Sorbonne Paris Nord, ausoni@math.univ-paris13.fr.

Teena Gerhardt (Postdoc Mentor), Michigan State University, teena@math.msu.edu.

Michael Hill, University of California, Los Angeles mikehill@math.ucla.

Mona Merling, University of Pennsylvania, mmerling@math.upenn.edu.

Holger Reich (Postdoc Mentor), Freie Universität Berlin, holger.reich@fu-berlin.de.

John Rognes, University of Oslo, rogn@math.uio.no.

Andrew Salch (Thesis Advisor), Wayne State University, asalch@math.wayne.edu.

Tsveta Sendova (Teaching reference), Michigan State University, tsendova@math.msu.edu.