

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

Chromatic homotopy theory, algebraic K-theory, Hochschild homology, and equivariant homotopy theory.

Publications

PUBLISHED

Gabriel Angelini-Knoll. Complex orientations and TP of complete discrete valuation rings. *Homol. Homotopy Appl.* (2023) **24** no. 1, 319 – 330.

Gabriel Angelini-Knoll. Detecting β elements in iterated algebraic K-theory of finite fields. *Trans. Amer. Math. Soc.* 376 (2023), pp. 2657-2692.

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

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.

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.

SUBMITTED

Gabriel Angelini-Knoll, Dominic Leon Culver, and Eva Höning. Topological Hochschild homology of truncated Brown-Peterson spectra I. [arXiv:2106.06785](#).

Gabriel Angelini-Knoll and Andrew Salch. Commuting unbounded homotopy limits with Morava K-theory. [arXiv:2003.03510](#).

Gabriel Angelini-Knoll and J.D. Quigley. Chromatic complexity of the algebraic K-theory of the Thom spectra $y(n)$. [arXiv:1908.09164](#).

Gabriel Angelini-Knoll, Teena Gerhardt, and Michael A. Hill. Real topological Hochschild homology via the norm and Real Witt vectors. [arXiv:2111.06970](#).

Gabriel Angelini-Knoll, Christian Ausoni, Dominic Culver, Eva Höning, and John Rognes. Algebraic K-theory of elliptic cohomology. [arXiv:2204.05890](#)

IN PROGRESS

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

Gabriel Angelini-Knoll, Mona Merling, and Maximilien Péroux. Homology of twisted G-rings.

Gabriel Angelini-Knoll and Jeremy Hahn. Syntomic cohomology of Morava K-theory.

Gabriel Angelini-Knoll, Christian Ausoni, and John Rognes. Algebraic K-theory of real topological K-theory.

Gabriel Angelini-Knoll, Michael A. Hill, Hana Jia Kong, and J.D. Quigley. Real syntomic cohomology.

Talks

CONFERENCE TALKS

Homotopy Theory in Trondheim. NTNU, 2023

Algebraic Topology GDR, Nantes, 2022

AIM Workshop on Equivariant Techniques in Stable Homotopy theory, San Jose, California, 2021.

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

AMS Sectional, University of Hawaii at Manoa, 2019.

LG&TBQ Conference at University of Michigan, 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.

Transatlantic Transchromatic Homotopy theory conference, University of Regensburg, 2017.

Graduate Student Geometry and Topology Conference, Indiana University, 2016.

Young Topologists' Meeting, École Polytechnique Fédérale de Lausanne, 2015.
Graduate Student Geometry and Topology Conference, UIUC, 2015.

SEMINAR TALKS

Nouveau séminaire ALPE, Université Montpellier, 2023
Université Sorbonne Paris Nord, Après-midi de Topologie Algébrique, 2022.
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.

TALKS AIMED AT UNDERGRADUATES.

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

Teaching

PRIMARY INSTRUCTOR

FREIE UNIVERSITÄT BERLIN

Topology I: Point-set topology and covering space theory. Summer 2022.
Cyclic homology. Winter 2021/22.
Symmetries. Summer 2021.
Algebraic K-theory. Winter 2020/21.
Equivariant stable homotopy theory. Winter 2020/21.
Cohomology of Groups. Summer 2020.
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. (Co-taught with H. Reich). Winter 2021/22.
Higher algebra I: A course on ∞ -categories. (Led exercise sessions for H. Reich.) Summer 2021.
Topology III: Homotopy. (Led exercise sessions for H. Reich.) Summer 2020.
Topology II: Homology. (Led exercise sessions for H. Reich.) Winter 2019/20.

RESEARCH SEMINAR ORGANIZER

UNIVERSITÉ SORBONNE PARIS NORD

The Chromatic Nullstellensatz (co-organized with C. Ausoni and T. Moulinos). Winter 2022/23

FREIE UNIVERSITÄT BERLIN

Hermitian K-theory. (Co-organized with H. Reich.) Winter 2021/22, Summer 2022.
Higher symmetry. (Co-organized with H. Reich.) Winter 2020/21.
K-theory of pullbacks. (Co-organized with H. Reich.) Winter 2020/21.
Chromatic homotopy. (Co-organized with H. Reich.) Summer 2020.

MICHIGAN STATE UNIVERSITY

Algebraic K-theory. (Co-organized with N. Grieve.) Winter 2018.

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), MSU, 2019.

REFEREE

Referee for *Annals of K-Theory*, *International Mathematics Research Notices*, *Journal of Pure and Applied Algebra*, *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

Sebastian Schneider, Title: Algebra via Lawverre theories, Freie Universität Berlin, 2022.
Vittorio Di Fraia (with H. Reich), 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.

Grants and Awards

AIM SQuaRE grant, Deformations of equivariant homotopy theory, 2023
The Dr. Chong-Shi Houh Award, Wayne State University, 2017.
Rumble Fellowship, Wayne State University, 2016.
K. W. and H. L. Folley Endowed Mathematics Scholarship, Wayne State University, 2016.
R. and N. Irvan Endowed Scholarship in Mathematics, Wayne State University, 2015.
The M. J. Zelonka Endowed Mathematics Scholarship, Wayne State University, 2014.
The Alfred L. Nelson Award, Wayne State University, 2013.
The Sheila Sparbeck Award, Wayne State University, 2012.

Languages

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