Gabriel J. Angelini-Knoll

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Research Interests

Factorization homology, algebraic K-theory, chromatic and equivariant homotopy theory

Academic Positions

2019-Present Postdoctoral Researcher, Freie Universität, Berlin, Germany
2017-Present Postdoctoral Researcher, Michigan State University, Lansing, Michigan (on leave)

Education

2017 PhD in Mathematics, Wayne State University, Detroit, Michigan
2013 MA in Mathematics, Wayne State University, Detroit, Michigan
2011 BA in Mathematics, Kalamazoo College, Kalamazoo, Michigan
2011 BA in Psychology, Kalamazoo College, Kalamazoo, Michigan

Publications

To appear Gabriel Angelini-Knoll, Teena Gerhardt, and Mike Hill. Real topological Hochschild homology, Witt vectors, and norms. *In preparation.* (Current draft 56 pages.)

To appear Gabriel Angelini-Knoll, Dominic Culver, and Eva Höning, Topological Hochschild homology of truncated Brown-Peterson spectra. *In preparation.* (Current draft 52 pages.)

2020 Gabriel Angelini-Knoll. On topological Hochschild homology of the K(1)-local sphere. *Accepted pending revisions in Journal of Topology.* arXiv:1612.00548.

2020 Gabriel Angelini-Knoll and J.D. Quigley. Chromatic complexity of the algebraic K-theory of the Thom spectra $y(n)$. *Submitted to Annals of K-theory.* arXiv:1908.09164.

2020 Gabriel Angelini-Knoll and Andrew Salch. Commuting unbounded homotopy limits with Morava K-theory. *Submitted to Mathematische Zeitschrift.* arXiv:2003.03510.

2018 Gabe Angelini-Knoll and Andrew Salch. A May-type spectral sequence for higher topological Hochschild homology. *Algebraic & Geometric Topology* **18** no. 5, 2593–2660.

2018 Gabriel Angelini-Knoll. Detecting the β-family in iterated algebraic K-theory of finite fields. *Submitted to Transactions of the American Mathematical Society.* arXiv:1810.10088.

2017 Gabriel Angelini-Knoll and J.D. Quigley. The Segal Conjecture for topological Hochschild homology of the Ravenel spectra $X(n)$ and $T(n)$. *Submitted to Journal of Homotopy theory and Related Structures.* arXiv:1705.03343.

Talks

Invited talks

TBD Universität Hamburg, Topology Seminar, (Postponed due to Covid-19)
TBD University of Pennsilvania, Geometry and Topology Seminar (Postponed due to Covid-19)
2020 École polytechnique fédérale de Lausanne, Topology Seminar (April)
2020 Massachusetts Institute of Technology, Topology Seminar (March)
2020 Equivariant Stable Homotopy Theory and p-adic Hodge Theory, BIRS, Banff, Canada (March)
2019 Freie Universität Berlin, Topology Seminar (May)
2019 University of California Los Angeles, Algebraic Topology Seminar (May)
2019 University of Illinois Urbana-Champaign, Topology Seminar (April)
2019 AMS Sectional, University of Hawaii at Manoa (March)
Northwestern University, Topology Seminar (March)
Electronic Computational Homotopy Theory Seminar (January)
2018 AMS Sectional, Ohio State University (March)
2017 AMS Sectional: Bloomington, Indiana (April)
Midwest Topology Conference, Wayne State University (November)
University of Kentucky, Topology Seminar (November)
Johns Hopkins University, Topology Seminar (February)
University of Chicago, Topology Seminar (February)
2016 University of Notre Dame, Topology Seminar (December)
Michigan State University, Topology Seminar (November)
Indiana University, Topology Seminar (November)
University of Illinois Urbana-Champaign, Topology Seminar (March)
Ohio State University, K-theory Seminar (February)

Contributed talks

2019 LG&TBQ Conference at University of Michigan, Ann Arbor (June)
2017 Transatlantic Transchromatic Homotopy theory conference, University of Regensberg (June)
2016 Graduate Student Geometry and Topology Conference, Indiana University (April)
2015 Young Topologists' Meeting, École Polytechnique Fédérale de (July)
Graduate Student Geometry and Topology Conference, UIUC (March)

Invited talks for an undergraduate audience

2018 REU in experimental mathematics, Michigan State University (June)
2017 Math Club, University of Kentucky (November)
2014 Undergraduate seminar, Kalamazoo College (February)
2013 Undergraduate seminar, Wayne State University (December)

Teaching

Freie Universität Berlin

Primary instructor:

Winter 2020/21 Algebraic K-theory: Fundamental theorems in algebraic K-theory and applications.
Winter 2020/21 Forschungsmodul: Topologie: Equivariant stable homotopy theory. Organized with E. Vogt.
Summer 2020 Forschungsmodul: Topologie: Cohomology of Groups. Organized with E. Vogt.
Winter 2019/20 Seminar zur Topologie: Simplicial Methods in Topology. Organized with E. Vogt.

Research seminar organizer:

Winter 2020/21 Forschungsseminar Geometrie und Topologie: Higher symmetry. Organized with H. Reich.
Winter 2020/21 Forschungsseminar Geometrie und Topologie: K-theory of pullbacks. Organized with H. Reich.
Summer 2020 Forschungsseminar Geometrie und Topologie: Chromatic homotopy. Organized with H. Reich.

Teaching Assistant:

Summer 2020 Aufbaumodul: Topologie III. A course on homotopy theory. (Course taught by H. Reich.)
Winter 2019/20 Basismodul: Topologie II. A course on homology theories. (Course taught by H. Reich.)

Michigan State University

Courses taught as primary instructor:

Winter 2019 Algebraic Topology II: Homotopy theory, spectral sequences, characteristic classes.
Fall 2018 Calculus I: A first course in calculus for engineering majors.
Winter 2018 Abstract Algebra I and Number Theory: A first course on ring theory.
Fall 2017 Business Calculus, Section 01: A first course in calculus for Business majors.
Fall 2017 Business Calculus, Section 13: A first course in calculus for Business majors.

Research seminar organization:

Winter 2018 Seminar on Algebraic K-theory. Organized with N. Grieve.

Wayne State University

Courses taught as primary instructor:

Fall 2015 Intermediate Algebra with Trigonometry: An elementary college algebra course.
Winter 2015 Intermediate Algebra with Trigonometry: An elementary college algebra course.
Winter 2014 Intermediate Algebra with Trigonometry: An elementary college algebra course.
Fall 2013 Elementary Functions: A course in precalculus.
Summer 2013 Elementary Statistics: A first course in statistics and probability.
Summer 2013 Math in Today's World: A quantitative literacy course.
Winter 2013 Elementary Functions: A course in precalculus.
Fall 2012 Elementary Functions: A course in precalculus.
Summer 2012 Math in Today's World: A quantitative literacy course.

Service

Conference organization

2019 Co-organizer for AMS Sectional Meeting on Homotopy theory. UW Madison. (September 2019)
Co-organizer for Midwest Topology Conference. Michigan State University. (May 2019)

Reviewer

Annals of K-theory

Undergraduate Research Mentorship

2019 Undergraduate research project leader and mentor for a NSF and NSA funded REU. Michigan State University. (Summer)
2019 Undergraduate research project leader and mentor for Discovering America Program. Michigan State University. Co-led with T. Gerhardt. (Winter)

Teaching mentorship

2018 Teaching Mentor for incoming Graduate Teaching Assistants. Michigan State University. (Fall)
2015 Teaching Mentor for incoming Graduate Teaching Assistants. Wayne State University. (Fall)
2013 Teaching Mentor for incoming Graduate Teaching Assistants. Wayne State University. (Fall)
2013 Course coordinator for Math in Today's World. Wayne State University. (Summer)

Awards

April 2017 The Dr. Chorng-Shi Houh Award. Wayne State University.
August 2016 Rumble Fellowship. Wayne State University.
April 2016 Karl W. and Helen L. Folley Endowed Mathematics Scholarship. Wayne State University.
April 2015 Robert and Nancy Irvan Endowed Scholarship in Mathematics. Wayne State University.
April 2014 The Maurice J. Zelonka Endowed Mathematics Scholarship. Wayne State University.
April 2013 The Alfred L. Nelson Award. Wayne State University.
April 2012 The Sheila Sparbeck Award. Wayne State University.

Languages

English (mother tongue), Spanish (B2), German (A2).

References

Teena Gerhardt teena@math.msu.edu
Mike Hill mikehill@math.ucla
Mona Merling mmerling@math.upenn.edu
Jack Morava jack@chow.mat.jhu.edu
Holger Reich holger.reich@fu-berlin.de
Andrew Salch asalch@math.wayne.edu
Tsveta Sendova tsendova@math.msu.edu (teaching reference)