Gabriel J. Angelini-Knoll

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Research Interests

Chromatic homotopy theory, algebraic K-theory, and equivariant homotopy theory

Academic Positions

2019-Present Postdoctoral Researcher, Freie Universität, Berlin, Germany
2017-2019 Postdoctoral Researcher, Michigan State University, Lansing, Michigan

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

Papers

Publications and Submitted papers

2020 Gabriel Angelini-Knoll and Andrew Salch, "Commuting unbounded homotopy limits with Morava K-theory," submitted, arXiv:2003.03510.
2019 Gabriel Angelini-Knoll and J.D. Quigley, "Chromatic complexity of the algebraic K-theory of the Thom spectra $y(n)$," submitted, arXiv:1810.10088.
2018 Gabe Angelini-Knoll and Andrew Salch (2018), "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*, 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*, arXiv:1705.03343.
2016 Gabriel Angelini-Knoll, "On topological Hochschild homology of the K(1)-local sphere," *submitted*, arXiv:1612.00548.

Talks

Invited talks

TBD Universität Hamburg, Topology Seminar, (Postponed due to Covid-19)
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)
Equivariant Stable Homotopy Theory and p-adic Hodge Theory, BIRS, Banff, Canada (March)
2019 Freie Universität Berlin, Topology Seminar (May)
University of California Los Angeles, Algebraic Topology Seminar (May)
University of Illinois Urbana-Champaign, Topology Seminar (April)
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)

Select expository talks

2018 On Kerz-Strunk-Tamme's Proof of Weibel's Conjecture, University of Illinois at Chicago (May)
Talbot workshop: Obstruction Theory, Gooding, Idaho. (May)
European Talbot Workshop: Invariants of Structured Ring Spectra, Switzerland (July)
2014 MSRI Summer School in Algebraic Topology, CIMAT, Guanajuato, MX (Expository) (July)

Teaching

Freie Universität Berlin

Courses taught as primary instructor:

Winter 2020/21 Algebraic K-theory: Waldhausen algebraic K-theory, fundamental theorems, and applications.

Seminar courses taught:

Winter 2020/21 Forschungsmodul: Topologie: Equivariant stable homotopy theory, organized with Elmar Vogt
Forschungsseminar Geometrie und Topologie: Algebraic Surgery, organized with Holger Reich
Summer 2020 Forschungsmodul: Topologie: Cohomology of Groups, organized with Elmar Vogt
Forschungsseminar Geometrie und Topologie: K-theory of pullbacks, organized with Holger Reich
Winter 2019/20 Seminar zur Topologie: Simplicial Methods in Topology, organized with Elmar Vogt
Forschungsseminar Geometrie und Topologie: Chromatic homotopy, organized with Holger Reich

Leader for exercise sessions:

Summer 2020 Aufbaumodul: Topologie III, Teaching assistant (course taught by Holger Reich)
Winter 2019/20 Basismodul: Topologie II, Teaching assistant (course taught by Holger Reich)

Michigan State University

Courses taught as primary instructor:

Winter 2019 MTH 961 – Algebraic Topology II: Homotopy theory, spectral sequences, characteristic class
Fall 2018 MTH 132 – Calculus I: A first course in calculus for engineering majors
Winter 2018 MTH 310 – Abstract Algebra I and Number Theory: A first course on ring theory
Winter 2018 Seminar on Algebraic K-theory, co-organized with Nathan Grieve
Fall 2017 MTH 124 – Business Calculus, Section 01: A first course in calculus for Business majors
Fall 2017 MTH 124 – Business Calculus, Section 13: A first course in calculus for Business majors

Wayne State University

Courses taught as primary instructor:

Fall 2015 MAT 1050 – Intermediate Algebra with Trigonometry: An elementary college algebra course
Winter 2015 MAT 1050 – Intermediate Algebra with Trigonometry: An elementary college algebra course
Winter 2014 MAT 1050 – Intermediate Algebra with Trigonometry: An elementary college algebra course
Fall 2013 MAT 1800 – Elementary Functions: A course in precalculus
Summer 2013 STAT 1020 – Elementary Statistics: A first course in statistics and probability
Summer 2013 MAT 1000 – Math in Today's World: A quantitative literacy course
Winter 2013 MAT 1800 – Elementary Functions: A course in precalculus
Fall 2012 MAT 1800 – Elementary Functions: A course in precalculus
Summer 2012 MAT 1000 – 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

Summer 2019 Undergraduate research mentor – NSF and NSA funded SURIEM REU at MSU
Winter 2019 Undergraduate research mentor – Discovering America program MSU, with Teena Gerhardt

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