James C. Cameron

CONTACT INFORMATION	155 South 1400 East JWB 312 Salt Lake City, UT 84112	cameron@math.utah.edu www.math.utah.edu/~cameron

RESEARCH INTERESTS

Tensor triangulated categories, homotopy theory, group cohomology, equivariant cohomology, representation theory, commutative algebra

EMPLOYMENT

University of Utah

Assistant Professor (Lecturer) (this is a postdoc position) 2021-

University of California Los Angeles

Hedrick Assistant Adjunct Professor 2018-2021

EDUCATION

University of Washington

Ph.D. in Mathematics, 2018

Advisors: Steve Mitchell, John Palmieri, Julia Pevtsova

M.S. in Mathematics, 2016

University of Texas at Austin

B.S. Mathematics Honors
B.A. Plan II Honors

Advisor: Cameron Gordon

PUBLICATIONS AND PREPRINTS

Computing homological fields in algebra and topology, joint with Paul Balmer. Accepted for publication in Proceedings of the American Math Society and available on the Arxiv at: https://arxiv.org/abs/2007.04485

ABSTRACT: We determine the homological residue fields, in the sense of tensor-triangular geometry, in a series of concrete examples ranging from topological stable homotopy theory to modular representation theory of finite groups.

The Duflot Filtration in Equivariant Cohmology, my PhD thesis.
Available at: https://www.math.ucla.edu/~jcameron/research/thesis.pdf

ABSTRACT: We study the $\mathbb{F}_p$-cohomology rings of the classifying space of a compact Lie group G using methods from equivariant cohomology. Building on ideas of Duflot and Symonds we study a "rank filtration" on the p-toral equivariant cohomology of a smooth manifold. We analyze the structure induced by this filtration and construct a well behaved chain complex that controls the local cohomology of the cohomology of BG. We also refine the Duflot filtration to a filtration by a ranked poset, and from this get a detection result and restrictions on associated primes that generalize some of the work of Carlson and of Okuyama from finite groups to general compact Lie groups. We also use our methods to give new local cohomology computations for the cohomology of p-Sylow subgroups of symmetric groups . In the final chapter we show that the derived category of cochains on the Borel construction of a finite G-CW complex is stratified in the sense of Benson, Iyengar, and Krause by the equivariant cohomology ring.

On the Duflot filtration for equivariant cohomology rings and applications to group cohomology, available on the Arxiv at: `https://arxiv.org/abs/1711.05832`

This is the first four chapters of my thesis, I intend to rewrite this as two separate papers.

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<tr><td>SEMINAR AND CONFERENCE TALKS</td><td>

Computing homological residue fields, AMS Spring Section Meeting Special Session on Hopf Algebras, Tensor categories, and Related homological methods (online), Brown University, March 2020

Homological residue fields and cooperations in topology and algebra, University of Virginia Topology Seminar (online), February 2021

Computing homological residue fields, University of California Santa Cruz Algebra and Number Theory Seminar (online), October 2020

Stratification for cochain algebras on Borel constructions of G-spaces, Zoom special session on DG Methods in Representation Theory and Commutative Algebra, May 2020

Stratification for derived categories of cochain algebras on Borel constructions of G-spaces, Equivariant Topology & Derived Algebra Conference, NTNU, July 2019

Group cohomology rings via Borel equivariant cohomology, University of California Los Angeles Algebraic Topology Seminar, April 2019

Thick and localizing subcategories for the derived categories of cochain algebras on Borel constructions, University of California Los Angeles Algebraic Topology Seminar, November 2018

Stratification for cochains algebras on Borel constructions of G-spaces, AMS Fall Sectional Meeting Special Session on Homological Aspects of Commutative Algebra and Representation Theory, San Francisco State University, October 2018

Local cohomology modules of group cohomology rings via topology, University of California Santa Cruz Algebra and Number Theory Seminar, October 2018

Local cohomology computations for group cohomology rings via topology, Stable Cohomology: Foundations and Applications, Snowbird Utah, May 2018

Local cohomology modules of group cohomology rings via topology, University of Western Ontario Algebra Seminar, February 2018

Refining the Duflot Filtration in Equivariant Cohomology, University of Western Ontario Geometry and Combinatorics Seminar, February 2018

The Duflot filtration in equivariant cohomology and applications to local cohomology, University of Copenhagen Algebra and Topology Seminar, January 2017

The Duflot filtration in equivariant cohomology and applications to the local cohomology modules of group cohomology rings, AMS Fall Sectional Meeting Special Session in Homotopy Theory, University of California at Riverside, November 2017

Structural aspects of group cohomology rings via equivariant cohomology, University of

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Washington Algebra Seminar, November 2017

The local cohomology modules of group cohomology rings, Informal Session at Invertibility and Duality in Homotopy Theory and Derived Algebraic Geometry Conference, University of Regensburg, April 2017

SELECTED HONORS & AWARDS
University of Washington Graduate School Fund for Excellence and Innovation Travel Award, 2017

McKibben and Merner Fellowship, University of Washington Math Department, 2013-2014

TEACHING

University of Utah
Accelerated Calculus II, Fall 2021
Accelerated Engineering Calculus II, Fall 2021

University of California Los Angeles

Graduate Commutative Algebra, Fall 2019
Introduction to Analysis, Fall 2020
Multivariable Calculus, Spring 2019
Introduction to Discrete Structures Fall 2018, Winter 2019, Winter 2020, Winter 2021
Linear Algebra Fall 2018, Winter 2019

University of Washington– sole instructor

Differential Equations Fall 2017
Differential Calculus Summer 2013, Summer 2014, Summer 2017
Linear Algebra Fall 2014, Winter 2015, Winter 2016
Advanced Multivariable Calculus Spring 2015
Math Reasoning Summer 2015

University of Washington– teaching assistant

Differential Calculus
Multivariable Calculus

University of Washington– grader

Undergraduate Differential Geometry
Graduate Topology and Geometry of Manifolds
Undergraduate Algebra
Geometry for Teachers

At the University of Texas

Undergraduate TA for "Research Methods" Course

SERVICE
Reviewer for American Journal of Math and Advances in Mathematics

Guest lecturer at University of California Los Angeles Math Circle, 2018 (2 guest lectures)

University of Washington Math Circle Instructor 2015-2018

University of Washington Math Olympiad Judge 2014, 2015, 2017, 2018

University of Washington TA Mentor 2015

REFERENCES   Paul Balmer, University of California Los Angeles, `balmer@math.ucla.edu`

Srikanth Iyengar, University of Utah, `iyengar@math.utah.edu`

John Palmieri, University of Washington, `palmieri@math.washington.edu`

Julia Pevtsova, University of Washington, `julia@math.washington.edu`

William Conley (teaching), University of California Los Angeles, `wconley@math.ucla.edu`