Zhaoting Wei

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Personal Information

Name **Zhaoting Wei**, *I also go by the name of* George.

Employment

Fall 2020- **Tenure Track Assistant Professor**, *Texas A&M University-Commerce*, Commerce, TX.

Fall 2016-Spring 2020 **Teaching Assistant Professor**, *Kent State University at Geauga*, Burton, OH.

Fall 2013-Spring 2016 **Zorn Postdoctoral Fellow**, *Indiana University Bloomington*, Bloomington, IN.

Visiting Positions

Visiting Researcher, *Institut des Hautes Études Scientifiques*, Bures-sur-Yvette, France, July-Aug. 2019, Dec. 2017-Jan. 2018, Dec. 2016-Jan. 2017, Jan.-June 2014.

Education

2007-2013 **Ph.D in Mathematics**, *University of Pennsylvania*, Philadelphia, PA.
Advisor: Prof. Jonathan Block
Thesis title: Baum-Connes Conjecture, Flag Varieties and Representations of Semisimple Lie Groups

2003-2007 **B.S. in Mathematics**, *Peking University*, Beijing, China.

Honors and Awards

2008 **Presidential Prize**, *University of Pennsylvania*.

2007-2011 **Benjamin Franklin Fellowship**, *University of Pennsylvania*.

2006 **First Prize (tier)**, *Beijing Undergraduate Mathematical Contest in Modeling*.

2005-2006 **Chun-Tsung Scholarship**, *Peking University*.

2004 **Wusi Scholarship**, *Peking University*.

Research Interests

Noncommutative Geometry, Representation Theory, Higher Category Theory and Mathematical Physics

Publications

Journal Papers

[1] Zhaoting Wei. Tensor-closed objects in the BGG category of a quantized semisimple Lie algebra. arXiv:1910.02326, to appear in **International Electronic Journal of**

Algebra, 2021.

[2] Zhaoting Wei. Scalar extensions of categorical resolutions of singularities. ***Journal of Pure and Applied Algebra***, Volume 222(7):1565–1578, 2018. journal link and arXiv link.

[3] Jonathan Block, Julian Holstein, and Zhaoting Wei. Explicit homotopy limits of dg-categories and twisted complexes. ***Homology, Homotopy and Applications***, Volume 19(2):343–371, 2017. journal link and arXiv link.

[4] Zhaoting Wei. Twisted complexes on a ringed space as a dg-enhancement of the derived category of perfect complexes. ***European Journal of Mathematics***, 2(3):716–759, 2016. journal link and arXiv link.

[5] Zhaoting Wei. The full exceptional collections of categorical resolutions of curves. ***Journal of Pure and Applied Algebra***, Volume 220(9):3332–3344, 2016. journal link and arXiv link.

[6] Zhaoting Wei. The noncommutative poisson bracket and the deformation of the family algebras. ***Journal of Mathematical Physics***, 56(7):071703, 21, 2015. journal link and arXiv link.

Preprints

[7] Zhaoting Wei. Twisted complexes and simplicial homotopies. arXiv:1905.07460, submitted, 2019.

[8] Zhaoting Wei. A recurrent formula of A_∞-quasi inverses of dg-natural transformations between dg-lifts of derived functors. arXiv:1903.01639, 2019.

[9] Zhaoting Wei. Descent of dg cohesive modules for open covers on compact complex manifolds. arXiv:1804.00993, submitted, 2018.

[10] Zhaoting Wei. The descent of twisted perfect complexes on a space with soft structure sheaf. arXiv:1605.07111, 2016.

[11] Zhaoting Wei. Covariant Weil algebras. arXiv:1211.3552, 2016.

[12] Zhaoting Wei. A proof of Baum-Connes conjecture of real semisimple lie groups with coefficient on flag varieties. arXiv:1211.4544, 2012.

Papers in Preparation

[13] Jean-Michel Bismut, Shu Shen, and Zhaoting Wei. Hypoelliptic Laplacian, cohesive modules, and a theorem of Riemann-Roch-Grothendieck. in preparation.

[14] Jonathan Block and Zhaoting Wei. Dolbeault differential graded algebras on lie groupoids and deformation quantization modules. in preparation.

Review Experiences

Reviewing papers for Zentralblatt MATH and Mathematical Reviews/MathSciNet, Referee for the Illinois Journal of Mathematics

Conference Presentations

January 2020 **Idempotent elements and holomorphic structures on quantum complex projective spaces**, Joint Mathematics Meetings, AMS Special Session on Noncommutative Geometry and Applications.
Denver, CO

September 2019 **Holomorphic structures on quantum projective spaces**, AMS Sectional Meeting, Special Session on Connections between Noncommutative Algebra and Algebraic Geometry.
University of Wisconsin, Madison, WI

July 2019 **Twisted complexes and simplicial homotopy (Poster)**, Conference on Integrability, Geometry and Moduli.
Max Planck Institute for Mathematics, Bonn, Germany

October 2018 **Base changes of categorical resolutions of singularities**, AMS Sectional Meeting, Special Session on Homological Aspects of Noncommutative Algebra and Geometry.
San Francisco State University, San Francisco, CA

August 2018 **Coherent sheaves and cohesive modules on complex manifolds**, Workshop on Global Analysis on Manifolds.
University of Science and Technology of China, Hefei, China

October 2016 **Twisted complexes and homotopy limits of dg-categories**, AMS Sectional Meeting, Special Session on Quantum Field Theories and Geometric Representation Theory.
University of St. Thomas, Minneapolis, MN

January 2016 **Twisted complexes and the homotopy limit of some cosimplicial dg-categories**, Joint Mathematics Meetings, AMS Session on Associative and Nonassociative Algebra and Rings.
Seattle, WA

July 2015 **Twisted complexes in algebraic geometry (Poster)**, 2015 Summer Research Institute on Algebraic Geometry.
University of Utah, Salt Lake City, UT

October 2013 **Riemann-Roch theorem and Duflo's isomorphism theorem**, AMS Sectional Meeting, Special Session on Higher Structures in Algebra, Geometry and Physics.
Temple University, Philadelphia, PA

Seminar Talks

February 2020 **Homotopy limits of dg-categories 2**.
Erie Categories and Topology Seminar, Case Western Reserve University, Cleveland, OH

February 2020 **Maurer-Cartan equation and perfect complexes**.
Algebra/Topology seminar, University of Copenhagen, Copenhagen, Denmark

February 2020 **The homotopy theory and homotopy limits of dg-categories**.
Erie Categories and Topology Seminar, Kent State University, Kent, OH

October 2019 **An introduction to BGG category in representation theory**.
Algebra Seminar, Kent State University, Kent, OH

July 2019 **Cohesive modules and noncommutative geometry**.
Noncommutative Geometry Seminar, Université Libre de Bruxelles, Brussels, Belgium

March 2016 **Twisted complexes and the descent of dg-categories**.
Algebra Seminar, University of Waterloo, Waterloo, ON, Canada

January 2016 **Homotopy limit of cosimplicial dg-categories and higher descent**.
Algebraic Geometry Seminar, Purdue University, West Lafayette, IN

November 2015 **Homotopy limit of cosimplicial dg-categories and higher descent**.
Math-Physics Joint Seminar, University of Pennsylvania, Philadelphia, PA

September 2015 **Twisted complexes and the homotopy limit of some cosimplicial dg-categories**.
Algebra Seminar, Indiana University Bloomington, Bloomington, IN

April 2015 **Twisted complexes as a dg-enhancement of perfect complexes**.
Algebra Seminar, Indiana University Bloomington, Bloomington, IN

May 2014 **A differential graded category with geometric nature**.
Réseau d'Étudiants en Géométrie Algébrique, Paris, France

March 2014 **Differential graded categories and geometry**.
Séminaire de Mathématiques, Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France

March 2014 **Hochschild homology and loop spaces**.
Séminaire MathJeunes, Paris, France

February 2014 **Asymptotic pseudodifferential operators, index theorem and quantization problems**.
Séminaire d'Algèbres d'Opérateurs, Université Paris Diderot - Paris 7, Paris, France

October 2013 **Hochschild cohomology, Atiyah class and Duflo's isomorphism on complex manifold**.
Algebra Seminar, Indiana University Bloomington, Bloomington, IN

February 2013 **From simplicial sets to simplicial groups and back**.
Algebra Seminar, Temple University, Philadelphia, PA

November 2012 **Real group orbits on flag varieties and equivariant K-theory**.
Noncommutative Geometry Seminar, Pennsylvania State University, University Park, PA

September 2012 **Pseudo-operads, operads, examples**.
Algebra Seminar, Temple University, Philadelphia, PA

July 2012 **The Springer resolution**.
Graduate Student Seminar, University of Pennsylvania

March 2011 **Weil algebras and covariant Weil algebras, quantizations (2 talks)**.
Noncommutative Geometry Seminar, University of Pennsylvania

February 2011 **Representation functors and representation schemes**.
Graduate Student Pizza Seminar, University of Pennsylvania

October 2009 **Introduction to C*-algebras and K-theory (3 talks)**.
Math-Physics Reading Seminar, University of Pennsylvania

April 2009 **Chern's intrinsic proof of Gauss-Bonnet formula**.
Graduate Student Geometry-Topology Seminar, University of Pennsylvania

March 2009 **Spin structure and Dirac operators (3 talks)**.
Noncommutative Geometry Seminar, University of Pennsylvania

February 2008 **Hopf algebras (2 talks)**.
Graduate Student Algebra Seminar, University of Pennsylvania

March 2007 **Pseudodifferential Operators (2 talks)**.
Undergraduate Student Reading Seminar, Peking University

October 2006 **Fredholm Operators and the Index Map**.
Undergraduate Student Reading Seminar, Peking University

Conference Participation

January 2020 **Joint Mathematics Meetings**.
Denver, CO

September 2019 **AMS Sectional Meeting, Special Session on Connections between Noncommutative Algebra and Algebraic Geometry**.
University of Wisconsin, Madison, WI

July 2019 **Conference on Integrability, Geometry and Moduli**.
Max Planck Institute for Mathematics, Bonn, Germany

May 2019 **Conference "Modern Trends in Non-Commutative Geometry"**.
Northwestern University, Evanston, IL

October 2018 **AMS Sectional Meeting, Special Session on Homological Aspects of Noncommutative Algebra and Geometry**.
San Francisco State University, San Francisco, CA

August 2018 **Workshop on Global Analysis on Manifolds**.
University of Science and Technology of China, Hefei, China

August 2017 **Interactions between Representation Theory and Algebraic Geometry**.
University of Chicago, Chicago, IL

October 2016 **AMS Sectional Meeting, Special Session on Quantum Field Theories and Geometric Representation Theory**.
University of St. Thomas, Minneapolis, MN

January 2016 **Joint Mathematics Meetings**.
Seattle, WA

October 2015 **AMS Sectional Meeting, Special Session on Cohomology of Algebras and Deformation Theory**.
Loyola University Chicago, Chicago, IL

July 2015 **2015 Summer Research Institute on Algebraic Geometry**.
University of Utah, Salt Lake City, UT

July 2015 **Research Program in Topology of Moduli Spaces and Representation Theory**.
Park City Mathematics Institute, Midway, UT

March 2015 **AMS Sectional Meeting, Special Session on Topics in Noncommutative Algebra and Algebraic Geometry**.
Michigan State University, East Lansing, MI

September 2014 **Introductory Workshop: Geometric Representation Theory**.
MSRI, Berkeley, CA

August 2014 **Mini-conference "Higher Structures in Philadelphia"**.
Temple University, Philadelphia, PA

March 2014 **Conference and Spring-School: Representation Theory and Geometry of Reductive Groups**.
Universität Paderborn, Germany

February 2014 **Winter School and Workshop "Higher Structures in Algebraic Analysis"**.
Padova University, Padova, Italy

October 2013 **AMS Sectional Meeting, Special Session on Higher Structures in Algebra, Geometry and Physics**.
Temple University, Philadelphia, PA

August-September 2013 **Gelfand Centennial Conference: A View of 21st Century Mathematics**.
MIT, Cambridge, MA

May 2013 **Representation Theory, Automorphic Forms, and Complex Geometry: A conference in honor of the 70th birthday of Wilfried Schmid**.
Harvard University, Cambridge, MA

May 2013 **The Eleventh Annual Spring Institute on Noncommutative Geometry and Operator Algebras**.
Vanderbilt University, Nashville, TN

April 2013 **Interactions between Noncommutative Algebra, Representation Theory, and Algebraic Geometry**.
MSRI, Berkeley, CA

January 2013 **Introductory Workshop: Noncommutative Algebraic Geometry and Representation Theory**.
MSRI, Berkeley, CA

August 2012 **Workshop on Categorical Representation Theory**.
University of Oregon, Eugene, OR

June 2012 **Workshop on Noncommutative Algebraic Geometry**.
MSRI, Berkeley, CA

May 2012 **Spring School on Algebraic Microlocal Analysis**.
Northwestern University, Evanston, IL

May 2012 **Perspectives in Representation Theory: A Conference in Honor of Igor Frenkel**.
Yale University, New Haven, CT

May-June 2011 **Summer School and Conference on Mathematical Aspects of Quantization**.
University of Notre Dame, Notre Dame, IN

May 2011 **The Ninth Annual Spring Institute on Noncommutative Geometry and Operator Algebras**.
Vanderbilt University, Nashville, TN

July 2009 **Workshop and Summer School on Lie Theory and Representation Theory**.
East China Normal University, Shanghai, China

June 2009 **Summer School on Geometry of Quantum Fields and Strings**.
University of Pennsylvania, Philadelphia, PA

May 2009 **Georgia International Topology Conference**.
University of Georgia, Athens, GA

July 2006 **Workshop and Summer School on Algebraic Geometry**.
East China Normal University, Shanghai, China

Teaching Experience

Fall 2020 **Math-1325 Mathematics for Business Applications II**, *Texas A&M University-Commerce*, Online Course.
Instructor

Fall 2020 **Math-2312 Pre-Calculus**, *Texas A&M University-Commerce*, Online Course.
Instructor

Fall 2020 **Math 10772 Modeling Algebra Plus**, *Kent State University at Geauga*.
Instructor

Spring 2020 **Math 10675 Algebra for Calculus Boost**, *Kent State University at Geauga*.
Instructor

Spring 2020 **Math 00022 Basic Algebra II**, *Kent State University at Geauga*, Emporium Teaching.
Instructor

Fall 2019 **Math 10675 Algebra for Calculus Boost**, *Kent State University at Geauga*.
Instructor

Fall 2019 **Math 10772 Modeling Algebra Plus**, *Kent State University at Geauga*.
Instructor

Fall 2019 **Math 10775 Algebra for Calculus Plus**, *Kent State University at Geauga*.
Instructor

Spring 2019 **Math 10041 Introductory Statisitcs**, *Kent State University at Geauga*.
Instructor

Spring 2019 **Math 10774 Algebra for Calculus Stretch II**, *Kent State University at Geauga*.
Instructor

Spring 2019 **Math 00022 Basic Algebra II**, *Kent State University at Geauga*, Emporium Teaching.
Instructor

Spring 2019 **Math 10775 Algebra for Calculus Plus**, *Kent State University at Geauga*.
Instructor

Fall 2018 **Math 12002 Analytic Geometry and Calculus I**, *Kent State University at Geauga*.
Instructor

Fall 2018 **Math 10041 Introductory Statisitcs**, *Kent State University at Geauga*.
Instructor

Fall 2018 **Math 11010 Algebra for Calculus**, *Kent State University at Geauga*.
Instructor

Fall 2018 **Math 10773 Algebra for Calculus Stretch I**, *Kent State University at Geauga*.
Instructor

Spring 2018 **Math 10041 Introductory Statisitcs**, *Kent State University at Geauga*.
Instructor

Spring 2018 **Math 10774 Algebra for Calculus Stretch II**, *Kent State University at Geauga*.
Instructor

Spring 2018 **Math 00022 Basic Algebra II**, *Kent State University at Geauga*, Emporium Teaching.
Instructor

Spring 2018 **Math 10775 Algebra for Calculus Plus**, *Kent State University at Geauga*.
Instructor

Fall 2017 **Math 10041 Introductory Statisitcs**, *Kent State University at Geauga*.
Instructor

Fall 2017 **Math 10772 Modeling Algebra Plus**, *Kent State University at Geauga.*
Instructor

Fall 2017 **Math 11010 Algebra for Calculus**, *Kent State University at Geauga.*
Instructor

Fall 2017 **Math 10775 Algebra for Calculus Plus**, *Kent State University at Geauga.*
Instructor

Spring 2017 **Math 10774 Algebra for Calculus Stretch II**, *Kent State University at Geauga.*
Instructor

Spring 2017 **Math 10772 Modeling Algebra Plus**, *Kent State University at Geauga.*
Instructor

Spring 2017 **Math 11010 Algebra for Calculus**, *Kent State University at Geauga.*
Instructor

Spring 2017 **Math 00022 Basic Algebra II**, *Kent State University at Geauga*, Emporium Teaching.
Instructor

Spring 2017 **Student Success Center**, *Kent State University at Geauga.*
Math Tutor

Fall 2016 **Math 10773 Algebra for Calculus Stretch I**, *Kent State University at Geauga.*
Instructor

Fall 2016 **Math 10772 Modeling Algebra Plus**, *Kent State University at Geauga.*
Instructor

Fall 2016 **Math 11010 Algebra for Calculus**, *Kent State University at Geauga.*
Instructor

Fall 2016 **Math 11009 Modeling Algebra**, *Kent State University at Geauga.*
Instructor

Spring 2016 **M301 Linear Algebra and Applications**, *Indiana University Bloomington.*
Instructor

Fall 2015 **M211 Calculus I**, *Indiana University Bloomington.*
Instructor, two sessions

Spring 2015 **M301 Linear Algebra and Applications**, *Indiana University Bloomington.*
Instructor

Fall 2014 **M211 Calculus I**, *Indiana University Bloomington.*
Instructor

Fall 2014 **M701 Selected Topics in Algebra (Derived and dg-categories, Graduate Course)**, *Indiana University Bloomington.*
Instructor

Fall 2013 **M211 Calculus I**, *Indiana University Bloomington.*
Instructor

Fall 2013 **M311 Calculus III**, *Indiana University Bloomington.*
Instructor

Spring 2013 **Math 104 Calculus I**, *University of Pennsylvania.*
Grader

Spring 2013 **Math 619 Algebraic Topology, Part I**, *University of Pennsylvania.*
Grader

Fall 2012 **Math 360 Advanced Calculus I**, *University of Pennsylvania*.
Teaching Assistant in charge of recitations and homework grading

Fall 2012 **Math 371 Abstract Algebra II**, *University of Pennsylvania*.
Teaching Assistant in charge of recitations and homework grading

Summer 2012 **Maple Help Session**, *University of Pennsylvania*.
Responsible for helping students with maple and solving other mathematic problems

Spring 2012 **Math 601 Introduction to Algebraic Topology**, *University of Pennsylvania*.
Grader

Fall 2011 **Math 600 Topology and Geometric Analysis**, *University of Pennsylvania*.
Grader

Summer 2011 **Math 104 Calculus I**, *University of Pennsylvania*.
Instructor

Summer 2010 **Maple Help Session**, *University of Pennsylvania*.
Responsible for helping students with maple and solving other mathematic problems

Spring 2010 **Math 425 Partial Differential Equations**, *University of Pennsylvania*.
Grader

Fall 2009 **Math 104 Calculus I**, *University of Pennsylvania*.
Teaching Assistant in charge of recitations and homework grading

Spring 2009 **Math 104 Calculus I**, *University of Pennsylvania*.
Teaching Assistant in charge of recitations and homework grading

Fall 2008 **Math 361 Advanced Calculus II**, *University of Pennsylvania*.
Teaching Assistant in charge of recitations and homework grading

Fall 2008 **Math 114 Calculus II**, *University of Pennsylvania*.
Teaching Assistant in charge of recitations and homework grading

Computer Skills

Expert C++, MATLAB, Maple

Basic HTML, Singular, GAP

Languages

Chinese Native

English Fluent

French Working

Updated

October 6, 2020