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Farid Aliniaeifard

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Education

2013-2017. Ph.D of Mathematics, York University, June 2017
Dissertation title: Normal Supercharacter Theories
Advisor: Nantel Bergeron

2011-2013. Master of Mathematics, Brock University, Canada
Dissertation title: Rings, Group Rings, and Their Graphs
Advisor: Yuanlin Li

2008-2011 Master of Mathematics, Isfahan University of Technology, Iran
Dissertation title: The Genus of Zero-divisor and Annihilating-Ideal Graphs
Advisors: Mahmood Behboodi and Hossein Khabazian

2004-2008. Bachelor of Applied Mathematics, University of Isfahan, Iran
Dissertation title: On Direct and Inverse Proportionality
Advisor: Majid Fakhar

Appointments

2017-Present. University of Colorado **Boulder**
Burnett Meyer Postdoc

Research

General interests. Algebra and Combinatorics.

Particular topics. Representation theory, character theory, symmetric functions, Hopf structures, polytopes, ring theory, group theory, and graph theory.

Publications

10. F. Aliniaeifard, Normal supercharacter theories and their supercharacters, J. Algebra 469 (2017) 464-484.
9. F. Aliniaeifard, Normal supercharacter theories, Ph.D thesis, York University (2017).
8. F. Aliniaeifard, Normal supercharacter theory, DMTCS proc. BC, 2016, 13-24, 28th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2016).
7. F.Aliniaeifard, M. Behboodi, and Y. Li, The annihilating-ideal graph of a ring, J.Korean Math. Soc. 52 (2015) 1323-1336
6. F. Aliniaeifard and Y. Li, Zero-divisor graphs for group rings, Comm. Algebra 42 (11) (2014) 4790-4800.

5. F. Aliniaeifard, M. Behboodi, E. Mehdi-Nezhad, and A. Masoud Rahimi, The annihilating-ideal graph of a commutative ring with respect to an ideal, Comm. Algebra 42 (5) (2014) 2269-2284.

4. F. Aliniaeifard, Rings, group rings, and their graphs, Master thesis, Brock University (2013).

3. F. Aliniaeifard, Y. Li, and W. Keith Nicholson, Morphic p-groups, J. Pure Appl. Algebra 217 (10) (2013) 1864-1869.

2. F. Aliniaeifard and M. Behboodi, Commutative rings whose zero-divisor graphs have positive genus, Comm. Algebra 41 (10) (2013) 3629-3634.

1. F. Aliniaeifard and M. Behboodi, Rings whose annihilating-ideal graphs have positive genus, J. algebra and Appl 11, 1250049 (2012) [13 pages].

Preprints and submitted works

1. F. Aliniaeifard and N. Thiem, The structure of normal lattice supercharacter theories, submitted (2018), arXiv:1810.01353.

2. F. Aliniaeifard and N. Thiem, Pattern groups and a poset based Hopf monoid, submitted (2018), arXiv:1810.01826.

3. F. Aliniaeifard and S. Burkett, Positive self-dual Hopf algebras of Galois characters, submitted (2018), arXiv:1710.03846.

4. F. Aliniaeifard and Shu Xiao Li, Theta maps for combinatorial Hopf algebras, preprint (2017), arXiv:1710.03925.

5. F. Aliniaeifard, C. Benedetti, N. Bergeron, and F. Saliola, Polytopes of independent sets of relations and their 1-skeleta, preprint (2017), arXiv:1804.00360.

6. F. Aliniaeifard, M. Behboodi, and Y. Li, Noetherian Rings Whose Annihilating-Ideal Graphs Have finite Genus, arXiv:1501.04329.

7. F. Aliniaeifard, M. Behboodi, E. Mehdi-Nezhad and A. Masoud Rahimi, On the Diameter and Girth of an Annihilating-Ideal Graph, arXiv:1411.4163.

Selected talks

- Normal supercharacter theories and Hopf structures, Rocky Mountain Algebraic Combinatorics Seminar, Colorado State University, Fort Collins, USA, September 2018.
- Normal supercharacter theories, PRIMA 2017, Oaxaca, Mexico, July 2017.
- Theta maps, Algebraic Combinatorics Working Seminar, Fields Institute, Toronto, Canada, January 2017.
- Normal supercharacter theory, Dyck paths, and Hopf structures, Algebraic Lie Theory Seminar, University of Colorado Boulder, USA, November 2017.
- Normal supercharacter theory, Dyck paths, and Hopf structures, Applied Algebra Seminar, York University, Canada, November 2017.
- Co-teaching and co-planning with TAs, students and colleagues in higher education, Teaching In Focus 2016 conference, York University, Canada, May 2016.
- Normal supercharacter theory, Applied Algebra Seminar, York University, Canada, February 2016.
- On the problem of Fibo-Catalans, Algebraic Combinatorics Seminar, Fields Institute, Canada, December 2014.

- The annihilating-ideal graph of a ring, Discrete Mathematics Seminar, York University, Canada, October 2014.
- The zero-divisor graphs of semigroups, rings, and group rings, The Applied Algebra Seminar, York University, Canada, October 2013.
- Zero-divisor graph for group rings, 31th Ohio State-Denison Mathematics conference, USA, May 2012.
- The annihilating-ideal graph of a non-commutative ring, 41th Iranian international conference on mathematics, Oromieh University, Iran, August 2010.

Teaching

Classes

2017-Present. University of Colorado **Boulder**

- **Undergraduate Courses:** MATH 2130: Introduction to Linear Algebra (Fall 2017, Spring 2018); MATH 2001: Discrete Mathematics, Proofs (Summer and Fall 2018).
- **Graduate Courses:** MATH 6900: Independent Study, Coxeter Groups and Hopf Algebras (Spring 2018); MATH 6250: Ring Theory (Spring 2019).

2016-2017. York University

- **Undergraduate Course:** MATH 1200: Problems, Conjectures, and Proofs, 2016-2017.

Service

Organizing

- Algebraic Lie Theory Seminar at University of Colorado Boulder, Fall 2017-Present (Co-organizer).

Committee work

- Tenure Track Adjudicating Committee, York University, Aug. 2015 - Aug. 2016.
- Ph.D Defense committee member for three students at University of Colorado Boulder.

Mentoring

- Graduate Peer Mentor, Bethune College, Feb. 2015 - Sept. 2016.

Refereeing/Reviewing

- Formal Power Series and Algebraic Combinatorics Conference
- Discrete Mathematics, Algorithms and Applications (DMAA)

Honor and Awards

- 2016 - 2017, Teaching Ticket Award.
- 2016 - 2017, Ontario Graduate Scholarship, $15000.
- 2013, Edgar and Irmgrad Penner Scholarship.
- 2013, One of the 5 Ph.D students of York University Nominated for Vanier Scholarship.

Computer Skills

- C, C++, SQL, html
- Matlab, LaTeX
- Sage, Python