

Emine YILDIRIM

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EDUCATION

PhD. in Mathematics,
Université du Québec à Montréal, Canada. August 2015–May 2018
University of New Brunswick, Canada. January 2014–August 2015
Advisor : Hugh Thomas

MSc. in Mathematics, February 2010–June 2011
Abant Izzet Baysal University, Turkey.
Advisor : Tahire Ozen Ozturk
Master Thesis : Studies on Some Complexes

BSc. in Mathematics, September 2006–January 2010
Abant Izzet Baysal University, Turkey.
Graduation Thesis I : Weierstrass Approximation Theorem
Graduation Thesis II : Finite State Machines

WORK EXPERIENCE

Coleman Postdoctoral Fellow July 2018–present
Queen’s University, Canada.

Teaching Assistant January 2014–August 2015
University of New Brunswick, Canada.

Lecturer August 2012–December 2013
Istanbul Arel University, Turkey.

PAPERS

V. Bazier-Matte, G. Douville, A. Garver, R. Patrias, H. Thomas, E. Yıldırım, *Leading Terms of SL_3 Web Invariants*, (revised and resubmitted to) International Mathematics Research Notices.

V. Bazier-Matte, G. Douville, K. Mousavand, H. Thomas, E. Yıldırım, *ABHY Associahedra and Newton Polytopes of F -polynomials for finite type cluster algebras*, arXiv:1808.09986.

E. Yıldırım, *Coxeter transformation on cominusculé posets*. Algebra and Representation Theory, Vol. 22 (2019), No. 3, pp. 699-722.

T. Brüstle, G. Douville, K. Mousavand, H. Thomas, and E. Yıldırım, *On the combinatorics of gentle algebras*, (to appear in) Canadian Journal of Mathematics.

T. Ozen and E. Yıldırım, *\mathcal{X} -Injective and \mathcal{X} -Projective Complexes*. Bull. Iranian Math. Soc. Vol. 42 (2016), No. 5, pp. 1221-1235.

**IN
PREPARATION**

B. Nguyen, C. Paquette, E. Yildirim, *A Completion of Discrete Cluster Categories of type A*.

AWARDS

- Queen's University Post-Doctoral Travel Award, 2018.
- Coleman Postdoctoral Fellowship at Queen's University, 2018-2019.
- ISM Scholarships for Outstanding PhD Candidates, 2018.
- ISM Graduate Scholarships at UQAM. 2016, 2017, 2018.
- Tuition Exemption Scholarships at UQAM. 2015, 2016, 2017, 2018.
- President's Doctoral Tuition Award at UNB. 2014.
- International Differential Scholarship at UNB. 2014.
- Graduate Scholarship from Prime Ministerial Office in Turkey. 2010-2011.
- Undergraduate Scholarship from Prime Ministerial Office in Turkey. 2006-2010.

ORGANIZING

- The Advances in Representation Theory of Algebras VIII, held at Queen's University, 2020.
- Geometry and Representation Theory Seminars, Queen's University at the math department, 2019-2020.
- Quantum Groups Learning Seminars, Queen's University at the math department, 2019-2020.

PRESENTATIONS

- *Rowmotion and Coxeter transformation*, Applied Algebra Seminar, York University, Toronto, September 2019.
- *A slight extension of discrete cluster categories*, Cluster Algebras and Quiver Representations, Centre de Recherches Mathématiques (CRM), August 2019.
- *Cluster categories for an infinite rank cluster algebra*, Summer Day of Representation Theory of Algebras, Université de Sherbrooke-Bishop's University, QC, July 2019.
- *The bounded derived category for cominuscule posets*, Maurice Auslander Distinguished Lectures and International Conference, Woods Hole, MA, April 2019.
- *The Web Basis and Preprojective Algebras*, American Mathematical Society Sectional Meeting, Hartford, CT, April 2019.
- *Associahedra and Newton Polytopes of F-Polynomials*, Cluster structures in geometry, physics, combinatorics and representation theory, Jerusalem, December 2018.
- *The bounded derived category for cominuscule posets*, Algebra seminar, Queen's University, Kingston, ON, September 2018.
- *Generalized Associahedra and Newton polytopes of F-polynomials*, Algebra seminar, Carleton University, Ottawa, ON, September 2018.
- *Associahedra via quiver representations*, Canadian Mathematical Society Summer Meeting, Fredericton, NB, June 2018.
- *The periodicity of the Coxeter transformation*, The XXI^e Colloque panquébécois des étudiants de l'Institut des Sciences mathématiques (ISM), Université de Sherbrooke, QC, May 2018.
- *The Coxeter transformation on cominuscule posets*, Séminaire de combinatoire, Université du Québec à Montréal, LaCIM, QC, February 2018.

- *The Coxeter transformation on cominuscule posets*, Department seminar, Mimar Sinan University, Istanbul, December 2017.
- *The Coxeter transformation on grid posets*, Department seminar, Istanbul Technical University, Istanbul, December 2017.
- *Cluster Monomials in Web Basis*, Algebra seminar, University of Sherbrooke, QC, November 2017.
- *Cluster Monomials in Web Basis*, Cluster algebras seminar, University of Connecticut, CT, November 2017.
- *Coxeter transformation on cominuscule posets*, Cluster algebras seminar, University of Connecticut, CT, October 2017.
- *Coxeter transformation on cominuscule posets*, Combinatoric seminar, University of Minnesota, MN, September 2017.
- *Auslander-Reiten translation on cominuscule posets*, Advances in Representation Theory of Algebras VI: Geometry and Homology (ARTA), Luminy, September 2017.
- *Periodic behavior of Auslander-Reiten translation*, The Mathematical Congress of the Americas (MCA), Montreal, QC, July 2017.
- *On the combinatorics of gentle algebras*, XXVIIIth Meeting on Representation Theory of Algebras, Sherbrooke, QC, September 2016.
- *Coxeter transformation of the poset of order ideals in a grid*, International Conference on Representations of Algebras, Syracuse, NY August 2016.
- *Cluster Algebras*, graduate seminar, University of New Brunswick, NB, April 2015.
- *Two dimensional Yetter-Drinfeld modules over $U_q(sl_2)$ are trivial*, Hopf Algebras in (Co)Action workshop, NB, June 2014.
- *Monomial ideals of path algebras*, research seminar, University of New Brunswick, NB, March 2014.

CONFERENCES ATTENDED

- The 29th Annual Route 81 Conference on Commutative Algebra and Algebraic Geometry, Kingston, ON, October 2019.
- The XXXIst Meeting on Representation Theory of Algebras, Sherbrooke, QC, September 2019.
- Quiver Varieties and Representation Theory, Centre de Recherches Mathématiques (CRM), Montreal, QC, August 2019.
- Maurice Auslander Distinguished Lectures and International Conference, Woods Hole, Massachusetts, MA, April 2019.
- American Mathematical Society Sectional Meeting, Hartford, CT, April 2019.
- Cluster structures in geometry, physics, combinatorics and representation theory, Jerusalem, December 2018.
- The 28th Annual Route 81 Conference on Commutative Algebra and Algebraic Geometry, Syracuse, September 2018.
- The XXXth Meeting on Representation Theory of Algebras, Sherbrooke, QC, September 2018.
- Canadian Mathematical Society Summer Meeting, Fredericton, NB, June 2018.
- The XIX^e Colloque panquébécois des étudiants de l'ISM, Université de Sherbrooke, QC, May 2018.

- Cluster Algebras: Twenty Years On, Centre International de Rencontres Mathématiques (CIRM), Luminy, 2018.
- Combinatorial Algebra meets Algebraic Combinatorics, Fifteenth Annual Meeting, Hamilton, ON, January 2018.
- The XXIXth Meeting on Representation Theory of Algebras, Sherbrooke, QC, September 2017.
- Advances in Representation Theory of Algebras VI: Geometry and Homology (ARTA), CIRM, Luminy, 2017.
- The Mathematical Congress of the Americas (MCA), Montreal, QC, July 2017.
- Maurice Auslander Distinguished Lectures and International Conference, Woods Hole, MA, April 2017.
- Combinatorial Algebra meets Algebraic Combinatorics, Fourteenth Annual Meeting, Montreal, QC, January 2017.
- The XXVIIIth Meeting on Representation Theory of Algebras, Sherbrooke, QC, September 2016.
- International Conference on Representations of Algebras, Syracuse, NY, August 2016.
- The XIX^e Colloque panquébécois des étudiants de l'ISM, QC, May 2016.
- Maurice Auslander Distinguished Lectures and International Conference, Woods Hole, MA, April 2016.
- Canadian Mathematical Society Winter Meeting, Montreal, QC, December 2015.
- The XXVIIth Meeting on Representation Theory of Algebras, Sherbrooke, QC, September 2015.
- Maurice Auslander Distinguished Lectures and International Conference, Woods Hole, MA, April 2015.
- Fall Eastern Sectional Meeting Dalhousie University, Halifax, NS, October 2014.

WORKSHOPS ATTENDED

- Connections for Women: Group Representation Theory and Applications, Mathematical Sciences Research Institute, Berkeley, CA February 2018.
- School and Workshop : Algebraic and Geometric Combinatorics of Reflection Groups, Montreal, QC, June 2017.
- Sage Days 86, UQAM, Montreal, QC, April 2017.
- Workshop on Representations of Algebras, Syracuse, NY, August, 2016.
- Positive Grassmannians, CRM, Montreal, QC, July 2015.
- Cluster algebras, Poisson Structure, Networks and Integrable Systems, CRM, Montreal, QC, July 2015.
- Hopf Algebras in (Co)Action, Fredericton, NB, June 2014.
- Noncommutative Geometry and Quantum Groups, Bahcesehir University, Istanbul, September 2014.
- Path Algebras and Homology, Bahcesehir University, Istanbul, January 2013.

TEACHING

Queen's University, Kingston, Canada: I taught *Vector Calculus* in the Fall semester 2018. The class size was about 150 students and I was responsible for every aspect of the teaching. I taught *Rings and Fields* in the Winter semester 2019 to 55 students. I am teaching *Vector Calculus* again in the Fall semester 2019, and I will teach *Linear Algebra* for the Winter semester 2020.

University of New Brunswick, Fredericton, Canada: From January 2014 to August 2015, I worked as a teaching assistant for introductory calculus classes. I was responsible for preparing exercises and grading. I conducted problem solving sessions for two hours every week. In addition, I worked as a tutor at the Math Help Center helping students in their homeworks.

Arel University, Istanbul, Turkey: From 2012 to 2014, I was a full time lecturer. I taught introductory calculus classes in English to first and second year engineering students. I was responsible for preparing and giving lectures, assigning and grading homeworks, preparing and grading exams.

SUPERVISING

Undergraduate:

- Elifnaz Gülsen, *Quiver representations and their interaction with algebra and combinatorics*
- Molly Liu, *Cluster algebras and combinatorics*

SKILLS

Languages: Turkish (native), English (fluent), French (intermediate).

Software: SAGE, GAP, PYTHON, R, JUPYTER.

Art: Painting, Photography.