Jonathan Wilson

8 Richmond Avenue, Wolverhampton, WV3 9JB, UK
+44 07842243943
jon.wilson@im.unam.mx

Research interests: Cluster algebras and their generalisations, orientable and non-orientable surfaces, representation theory of quivers, categorification of cluster algebras, combinatorial theory of polytopes.

Employment

Instituto de Matemáticas, Universidad Nacional Autónoma de México (UNAM), Mexico

Postdoctoral Researcher, October 2018–March 2020

Eberhard-Karls-Universität Tübingen, Germany

Postdoctoral Researcher, October 2017– September 2018

Education

Durham University, UK

Ph.D., Pure Mathematics, October 2013–May 2017 (Viva date: 8 May 2017)

University of Cambridge, UK

MASt in Mathematics, Part III, October 2012–2013

Swansea University, UK

BSc. in Mathematics, Mathematics, October 2009–2012

Publications and Preprints

[1] *Shellability and sphericity of finite quasi-arc complexes.* 10.1007/s00454-017-9929-0, **Discrete and Computational Geometry**, Volume 59, Issue 3, April 2018, pp 680–706.

[2] *Laurent phenomenon algebras arising from surfaces.* 10.1093/imrn/rnw341, **International Mathematics Research Notices**, Volume 2018, Issue 12, 13 June 2018, Pages 3800–3833.

[3] *Laurent phenomenon algebras arising from surfaces II – laminated surfaces.* arXiv:1802.06962, 2018, to appear in **Selecta Mathematica**.

[4] *Positivity for quasi-cluster algebras.* arXiv:1912.12789, 2019.

[5] *Surface cluster algebra expansion formulae via loop graphs.* arXiv:2006.13218, 2020.

[6] (With C. Geiss, D. Labardini-Fragoso, J. Schröer.) *Generic and Bangle bases, in preparation, 23 pages.*

[7] (With V. Bazier-Matte, R. Huang, H. Luo) *Bases for quasi-cluster algebras, in preparation, 10 pages.*

Lecture Series

- Expansion formulas and good bases for surface cluster algebras (3 talks). In: *International Centre for Theoretical Sciences (ICTS), Bangalore, India: School on Cluster Algebras*, December 8–23, 2018.

Talks at International Conferences

- Expansion formulae for quasi-cluster algebras. In *Oaxaca, BIRS-CMO*, Dec 8–9, 2019.
- Expansion formulae for quasi-cluster algebras. In *University of Leeds: New Connections and Directions in Representation Theory and Related Topics*, April 15–17, 2019.
- Expansion formulae for quasi-cluster algebras. In *University of Leicester: Tropical Geometry meets Representation Theory II*, April 8–12, 2019.
- Expansion formulae for quasi-cluster algebras. In *UNAM, Mexico: Mini Workshop on Cluster Theory*, March 21–22, 2019.
- Cluster structures from laminated surfaces. In: *CIRM, Luminy, France: Representations in Lie Theory and Interactions*, November 5–9, 2018.
- Cluster structures from laminated surfaces. In: *Michigan State University: Cluster Algebras and Mathematical Physics*, May 7–12, 2018.
- Nonorientable Surfaces and their cluster structure. In: *University Notre Dame: Quivers and Bipartite Graphs: Physics and Mathematics*, May 2–6, 2016.
- The cluster structure of non-orientable surfaces. In: *Münster: Cluster Algebras and Geometry*, March 10–12, 2016.
- Wilson, J. Quasi-cluster algebras and the structure of the finite type exchange graphs. In: *KIAS; Korea: Young Mathematicians Workshop on Cluster Algebras*, December 12, 2014.
- Wilson, J. Quasi-cluster algebras from non-orientable surfaces. In: *Cardiff University: LMS Workshop on Cluster Algebras and Preprojective Algebras*, October 17–18, 2014.

Seminar Talks

- Cluster structures from surfaces and the magic of perfect matchings. In *UNAM: Instituto de Matemáticas Colloquium*, November 17, 2019.
- Expansion formulae for quasi-cluster algebras. In *CIMAT: Commutative Algebra and Algebraic Geometry Seminar*, Guanajuato, Mexico, October 7, 2019.
- An introduction to Hall Algebras. In *UNAM: Representation theory seminar*, Mexico City, Mexico, September 30, 2019.
- Cluster structures from laminated surfaces. In: *Durham University Cluster Algebra Seminar*, Durham, UK May 4, 2017.
- A short course (6 talks) on Laurent Phenomenon algebras and their connection to surfaces. In: *Durham University Cluster Algebra Seminar*, Durham, UK, January - March 2017.
- Triangulated non-orientable surfaces and their flip structure. In: *University of Manchester Geometry Seminar*, Manchester, UK, March 3, 2016.
- The structure of arc complexes. In: *Durham University Gandalf Seminar*, October 13, 2015.

Teaching Experience

Instituto de Matemáticas, Universidad Nacional Autónoma de México (UNAM), Mexico

Lecturer: Course on Cluster Algebras for graduate students, 26 lectures. **February 2019 - June 2019**

Eberhard-Karls-Universität Tübingen, Germany

Lecturer: Course on Cluster Algebras for graduate students, 28 lectures. **October 2017 - July 2018**

Durham University, UK

Tutor for Algebra II : 2nd year undergraduate course in *Groups*, *Rings* and *Fields*. Tutor for 3 groups of approx. 15 students. **October 2014 - May 2017**

Esteem

- Referee for Boletín de la Sociedad Matemática Mexicana and MathSciNet.
- Teach@Tübingen Award, 2017–2018, Eberhard-Karls-Universität Tübingen.
- EPSRC Doctoral Scholarship, 2013–2017, Durham University.
- Institute of Mathematics Prize, 2011–2012, Institute of Mathematics and its Applications.
- Senior Foulkes Prize in Mathematics, 2011–2012, Swansea University.
- Lynne Charles Prize in Mathematics, 2010–2011, Swansea University.
- Junior Foulkes Prize in Mathematics, 2009–2010, Swansea University.

Programming experience

- LaTeX.
- Python.
- Mathematica.
- IPE.