

Jon Wilson

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(don't spell my surname backwards)



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

Jeremiah Horrocks Institute, University of Central Lancashire, UK

Lecturer in Mathematics, January 2021 – present

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*. 10.1007/s00029-020-00591-5, **Selecta Mathematica**, Volume 26, Issue 5, 14 October 2020, Pages 1–53.
- [4] *Positivity for quasi-cluster algebras*. arXiv:1912.12789, 2019.
- [5] *Surface cluster algebra expansion formulae via loop graphs*. arXiv:2006.13218, 2020.

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, 28 lectures.

**October 2017 -
July 2018**

Durham University, UK

Tutor: 2nd year undergraduate course on *Groups, Rings and Fields*
(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.