Jon Wilson

Jeremiah Horrocks Institute University of Lancashire Preston, PR1 2HE ☐ 01772 893530 ☑ j[surname]30@uclan.ac.uk Inttp://jon-m-wilson.github.io/ Replace [surname] with my surname.



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 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

- 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, preprint: arXiv:1912.12789, 2019.
- [5] Surface cluster algebra expansion formulae via loop graphs, preprint: arXiv:2006.13218, 2020.
- [6] Bangle functions are the generic basis for cluster algebras from punctured surfaces with boundary (*jt. with Christof Geiß and Daniel Labardini-Fragoso*), preprint: arXiv:2310.03306, 2024
- [7] Laminations of punctured surfaces as τ-reduced irreducible components (jt. with Christof Geiß and Daniel Labardini-Fragoso), 2025, preprint: arXiv:2308.00792.

Current Teaching

University of Lancashire, UK

Lecturer: 3 rd year undergraduate course on <i>Coding Theory</i> , 24 lectures.	Sept 2025 - present
Lecturer: 3 rd year undergraduate course on Complex Analysis, 24 lectures.	Jan 2021 - present
<i>Lecturer</i> : 2 nd year undergraduate course on <i>Cryptology</i> , 24 lectures.	Sept 2023 - present
Lecturer: 2 nd year undergraduate course on Further Real Analysis, 24 lectures.	Oct 2021 - present
Lecturer: 1 st year undergraduate Study Skills sessions, 6 lectures	Oct 2021 - present
Past Teaching	
University of Lancashire, UK	
Lecturer: Foundation year course on Pure Mathematics and Statistics, 18 lectures.	Sept 2024 - Jan 2025
Lecturer: 1 st year undergraduate course on Abstract Algebra, 12 lectures	Jan 2021 - Sept 2023
Tutor: 1 st year undergraduate course on Linear Algebra and Abstract Algebra, 24 tutorials.	
	Jan 2021 - Sept 2024
Instituto de Matemáticas, Universidad Nacional Autónoma de México (UNAM), Mexico	
Lecturer: Course on Cluster Algebras for graduate students, 26 lectures.	Feb 2019 - Jun 2019.
Eberhard-Karls-Universität Tübingen, Germany	
Lecturer: Course on Cluster Algebras, 28 lectures.	Oct 2017 - July 2018.

Durham University, UK

Tutor: 2nd year undergraduate course on Groups, Rings and FieldsOct 2014 - May 2017(3 groups of approx. 15 students.)

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 punctured surfaces. *University of Lancashire: Cluster Structures in the North*, June, 2023.
- Expansion formulae for quasi-cluster algebras. Oaxaca, BIRS-CMO, Dec 8-9, 2019.
- Expansion formulae for quasi-cluster algebras. University of Leeds: New Connections and Directions in Representation Theory and Related Topics, April 15–17, 2019.
- Expansion formulae for quasi-cluster algebras. University of Leicester: Tropical Geometry meets Representation Theory II, April 8–12, 2019.
- Expansion formulae for quasi-cluster algebras. UNAM, Mexico: Mini Workshop on Cluster Theory, March 21–22, 2019.
- Cluster structures from laminated surfaces. CIRM, Luminy, France: Representations in Lie Theory and Interactions, November 5–9, 2018.
- Cluster structures from laminated surfaces. Michigan State University: Cluster Algebras and Mathematical Physics, May 7–12, 2018.
- Nonorientable Surfaces and their cluster structure. University Notre Dame: Quivers and Bipartite Graphs: Physics and Mathematics, May 2–6, 2016.
- The cluster structure of non-orientable surfaces. *Münster: Cluster Algebras and Geometry*, March 10–12, 2016.
- Wilson, J. Quasi-cluster algebras and the structure of the finite type exchange graphs. *KIAS; Korea: Young Mathematicians Workshop on Cluster Algebras*, December 12, 2014.
- Wilson, J. Quasi-cluster algebras from non-orientable surfaces. *Cardiff University: LMS Workshop on Cluster Algebras and Preprojective Algebras*, October 17–18, 2014.

Seminar Talks

- Conway-Coxeter Frieze patterns. University of Lancashire: Mathematics Seminar, January, 2023.
- An introduction to Game Theory. University of Lancashire: JHI Postgraduate Lectures, December, 2022.
- Cluster structures from surfaces and the magic of perfect matchings. UNAM: Instituto de Matemáticas Colloquium, November 17, 2019.
- Expansion formulae for quasi-cluster algebras. *CIMAT: Commutative Algebra and Algebraic Geometry Seminar*, Guanajuato, Mexico, October 7, 2019.
- An introduction to Hall Algebras. UNAM: Representation theory seminar, Mexico City, Mexico, September 30, 2019.
- Cluster structures from laminated surfaces. Durham University Cluster Algebra Seminar, Durham, UK May 4, 2017.
- A short course (6 talks) on Laurent Phenomenon algebras and their connection to surfaces. *Durham University Cluster Algebra Seminar*, Durham, UK, January March 2017.
- Triangulated non-orientable surfaces and their flip structure. University of Manchester Geometry Seminar, Manchester, UK, March 3, 2016.
- The structure of arc complexes. *Durham University Gandalf Seminar*, October 13, 2015.

Fellowships, Grants, and Scholarships

- Principal grant holder for the CLAN research network (supported via LMS Scheme 3). Grant ref. 32433. October 2023 - present. Value: £2700.
- London Mathematical Society Conference Grant Scheme 9 Celebrating New Appointments.
 Grant ref. 42218. July 2023. Value: £709 (inc. £210 contributed by the Jeremiah Horrocks Institute).
- EPSRC Doctoral Scholarship, 2013–2017, Durham University.

Esteem

- Nominated for Lecturer of the Year (2025) at University of Lancashire.
- Associate Fellow of the Higher Education Academy (AFHEA) awarded 20/09/2022.
- Referee for Boletín de la Sociedad Matemática Mexicana and MathSciNet.
- Teach@Tübingen Award, 2017–2018, Eberhard-Karls-Universität Tübingen.
- 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.
- o Junior Foulkes Prize in Mathematics, 2009–2010, Swansea University.

Programming experience

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• Python.

- Mathematica.
- o IPE.