

Dr. Jonathan M. Wilson

CONTACT INFORMATION

Instituto de Matemáticas
Universidad Nacional Autónoma de México
Circuito exterior, Ciudad Universitaria
04510, México

Mobile: +44 (0)7745300777

E-mail: jon.wilson@gmx.com

Web: <http://jon-m-wilson.github.io>

RESEARCH INTERESTS

Cluster algebras and their generalisations, cluster structures from 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–present

- Postdoctoral mentors: Prof. Christof Geiss and Dr. Daniel Labardini-Fragoso

Eberhard-Karls-Universität Tübingen, Germany

Postdoctoral Researcher, October 2017– September 2018

- Postdoctoral mentor: Prof. Christoph Bohle

EDUCATION

Durham University, UK

Ph.D., Pure Mathematics, October 2013–May 2017

- Adviser: Dr Anna Felikson
- Area of Study: Cluster Algebras

University of Cambridge, UK

MASt, Part III, October 2012–2013

- Area of Study: Pure Mathematics

Swansea University, UK

BSc., Mathematics, October 2009–2012

PREPRINTS

- [1] *Laurent phenomenon algebras arising from surfaces II – laminated surfaces*. [arXiv:1802.06962](https://arxiv.org/abs/1802.06962), 2018, submitted to Selecta Mathematica.
- [2] *Positivity for quasi-cluster algebras*. [arXiv:1912.12789](https://arxiv.org/abs/1912.12789), 2019.
- [3] *Bases for quasi-cluster algebras*, in preparation.
- [4] *Skein relations for non-orientable surfaces*, in preparation.
- [5] (With C. Geiss, D. Labardini-Fragoso, J. Schröer.) *Generic and Bangle bases*, in preparation.

PUBLICATIONS

- [6] *Shellability and sphericity of finite quasi-arc complexes*. [10.1007/s00454-017-9929-0](https://doi.org/10.1007/s00454-017-9929-0), Discrete and Computational Geometry, Volume 59, Issue 3, April 2018, pp 680–706.
- [7] *Laurent phenomenon algebras arising from surfaces*. [10.1093/imrn/rnw341](https://doi.org/10.1093/imrn/rnw341), International Mathematics Research Notices, Volume 2018, Issue 12, 13 June 2018, Pages 3800–3833.

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 (intended). 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*, April 15–17, 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. **October 2015 - May 2017**

- 2nd year undergraduate course in *Groups, Rings and Fields*. Tutor for 3 groups of approx. 15 students.

Tutor for Algebra II. **October 2014 - May 2015**

- 2nd year undergraduate course in *Groups, Rings and Fields*. Tutor for 2 groups of approx. 15 students.

OTHER MEETING
ATTENDANCE

General Participant

- New Trends in Representation Theory: The Impact of Cluster Theory in Representation Theory, *Leicester, UK*, June 19 – 23, 2017.
- Joint Notre Dame - La Sapienza workshop on lie theory and cluster algebras, *Rome, Italy*, October 17–21, 2016.
- Total Positivity: A bridge between Representation Theory and Physics, *Canterbury, UK*, January 7 – 12, 2016.
- Journées de Géométrie Hyperbolique, *Fribourg, Switzerland*, October 15 – 16, 2015.
- GEAR Junior Retreat, *Ann Arbor, Michigan*, May 23 – June 1, 2014.
- IRMA Master Class : Around Thurston-Grothendieck-Teichmüller theories, *Strasbourg, France*, February 9–17, 2014.
- 3rd Young Geometric Group Theory Meeting, *Luminy, France*, January 20–24, 2014.

OTHER ACTIVITIES

Referee:

- Boletín de la Sociedad Matemática Mexicana

Reviewer:

- MathSciNet

AWARDS

Eberhard-Karls-Universität Tübingen

- Teach@Tübingen Award, 2017–2018

Durham University

- EPSRC Doctoral Scholarship, 2013–2017

Swansea University

- Institute of Mathematics Prize, 2011–2012
- Senior Foulkes Prize in Mathematics, 2011–2012
- Lynne Charles Prize in Mathematics, 2010–2011
- Junior Foulkes Prize in Mathematics, 2009–2010