

## Curriculum Vitae Philipp Lampe

### Personal data

Abteilung für Mathematik und ihre Didaktik  
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### Employment and education

Mar 2022 - Now	Wissenschaftlicher Mitarbeiter, Europa-Universität Flensburg
Jul 2018 - Feb 2020	Research Associate, University of Kent
May 2017 - Apr 2018	Research Associate, Durham University
Jan 2011 - Apr 2017	Postdoctoral researcher, Bielefeld University
Jan 2008 - Dec 2010	PhD student, University of Bonn Supervisor: Jan Schröer Thesis: Quantum cluster algebras and the dual canonical basis
Oct 2003 - Dec 2007	Undergraduate student, University of Bonn Major subject: mathematics, minor subject: physics Supervisor: Jan Schröer Thesis: Cluster-Algebren vom Rang 2
Oct 2002 - Jul 2003	Undergraduate student, FernUniversität Hagen Major subject: mathematics, minor subject: computer science
Oct 2002 - Sep 2003	Community service, Caritas-Elisabethstift, Rheine

### Academic honours

Jan 2008 - Dec 2010	Hausdorff fellowship, Bonn International Graduate School
Oct 2003 - Dec 2007	Fellowship, Studienstiftung des deutschen Volkes
2001 - 2002	2 Bronze medals, International Mathematical Olympiad

### Publications

#### **13. Snake graphs and their characteristic polynomials**

Coauthors: J. Bradshaw, D. Ziga. Preprint arXiv:1910.11823 (2019)

#### **12. Exchange graphs for mutation-finite non-integer quivers of rank 3**

Coauthor: A. Felikson. Preprint arXiv:1904.03928 (2019)

#### **11. Cluster algebras and discrete integrability**

Coauthors: A. Hone, T. Kouloukas. Preprint arXiv:1903.08335 (2019)

#### **10. An expansion formula for type A and Kronecker quantum cluster algebras**

Coauthor: İ. Çanakçı. Journal of Combinatorial Theory, Series A, 171, issue C

#### **9. Factoriality and class groups of cluster algebras**

Coauthors: A. Garcia-Elsener, D. Smertnig. Preprint arXiv:1712.06512 (2017)

### 8. Variations on Baur–Marsh’s determinant

Preprint arXiv: arXiv:1709.02587 (2017)

### 7. Maximum antichains in posets of quiver representations

Coauthor: F. Gellert. Contributions to Algebra and Geometry 59 (2018), 1–20

### 6. On the approximate periodicity of sequences attached to noncrystallographic root systems

Experimental Mathematics 27 (2018), no. 3, 265–271

### 5. Diophantine equations via cluster transformations

J. Algebra 462 (2016), 320–337

### 4. Quantisation Spaces of Cluster Algebras

Coauthor: F. Gellert. Glasgow Mathematical Journal 60 (2018), no. 2, 273–284

### 3. Cluster algebras from a ring theoretic point of view

Preprint arXiv:1210.1502 (2012)

### 2. Quantum cluster algebras of type A and the dual canonical basis

Proceedings of the London Mathematical Society 108 (2014), no. 1, 1–43

### 1. A quantum cluster algebra of Kronecker type and the dual canonical basis

International Mathematics Research Notices 2011 (2011), no. 13, 2970–3005

## Conference proceedings

### 1. The divisor class group of a cluster algebra

Oberwolfach Reports 8 (2014), 484–485

### 2. Cluster algebras and the dual canonical basis

Oberwolfach Reports 8 (2011), no. 10, 564–565

## Invited talks and conference presentations

Jun 7, 2019	<b>The growth of real seeds in cluster theory and a group theoretic determinant</b> 60 min, Bielefeld Representation Theory Seminar
Apr 15-17, 2019	<b>The growth of real seeds in cluster theory and a group theoretic determinant</b> 60 min, NCDRT Leeds
Oct 17, 2018	<b>Cluster algebras over finite fields</b> 25 min, Pseudo-Randomness and Finite Fields, RICAM Linz
April 17, 2018	<b>Diophantine equations via cluster transformations</b> 50 min, Newcastle University
Feb 19, 2018	<b>Cluster algebras: factoriality and class groups</b> 60 min, Algebra Seminar, University of Lancaster
Jan 30, 2018	<b>Cluster algebras: factoriality and class groups</b> 60 min, Algebra Seminar, University of Leeds
Jan 24, 2018	<b>Cluster algebras: factoriality and class groups</b> 60 min, Université du Québec à Montréal
Aug 14, 2017	<b>The representation theory of the Lorentz group</b> 60 min, Summer School on Gentle Algebras, Bad Driburg

- Aug 7, 2017 **Variations on Baur-Marsh's determinant**  
60 min, Algebra and Number Theory Seminar, Graz
- May 15, 2017 **Diophantine equations via cluster transformations**  
50 min, Pure Maths Colloquium today, Durham
- Oct 17-21, 2016 **Diophantine equations via cluster transformations**  
50 min, Workshop on Lie Theory and Cluster Algebra, Rome
- Aug 10-19, 2016 **Maximum antichains in posets of quiver representations**  
20 min, ICRA 2016, Syracuse
- Mar 10-12, 2016 **Diophantine equations via cluster transformations**  
25 min, Cluster Algebras and Geometry, Münster
- Dec 4, 2015 **On the singular locus of cluster algebras of type D**  
60 min, Representation theory seminar, Bonn
- Sep 19-23, 2015 **Almost periodic sequences attached to non-crystallographic root systems**  
20 min, Meeting of the German Mathematical Soc., Hamburg
- Sep 4, 2015 **Ring theoretic properties of cluster algebras**  
90 min, Representation theory seminar, Nagoya
- Sep 2, 2015 **Quantization spaces of cluster algebras**  
90 min, Representation theory seminar, Nagoya
- Jun 3-5, 2015 **Almost periodic sequences attached to non-crystallographic root systems**  
50 min, Cluster Algebras and Fin. Dim. Algebras, Leicester
- Feb 2, 2015 **Almost periodic sequences attached to non-crystallographic root systems**  
40 min, A Cluster Algebras Day, Pisa
- Dec 13-17, 2014 **Almost periodic sequences attached to non-crystallographic roots systems and cluster theory**  
30 min, Cluster Algebras in Combinatorics and Topology, Seoul
- Oct 17-18, 2014 **Ring theoretic properties of cluster algebras**  
50 min, Cluster Alg. and Preprojective Algebras (LMS), Cardiff
- Aug 19-29, 2014 **The divisor class group of a cluster algebra**  
20 min, ICRA 2014, Sanya
- Jul 7-10, 2014 **Quantizations of cluster algebras**  
30 min, Mathematics Days in Sofia, Sofia
- Feb 16-22, 2014 **The divisor class group of a cluster algebra**  
30 min, Oberwolfach
- Feb 6-8, 2014 **Quantization Spaces of Cluster Algebras**  
25 min, Cluster Algebras and Combinatorics, Münster
- Nov 15, 2013 **Divisor class groups of cluster algebras**  
90 min, Representation theory seminar, Bonn
- Oct 13-18, 2013 **Quantum cluster algebras**  
30 min, Oberwolfach
- Aug 26-30, 2013 **Coherent sheaves and Serre's construction**  
60 min, Summer School on Preprojective Alg., Bad Driburg
- Mar 25-28, 2013 **What do cluster structures tell you about an algebra?**  
60 min, Darstellungstheorie Schwerpunkttagung, Bad Boll
- Sep 14, 2012 **Cluster algebras from a ring theoretic point of view**  
Presentation, MSRI, Berkeley
- Aug 8-17, 2012 **Cluster algebras from a ring theoretic point of view**  
20 min, ICRA 2012, Bielefeld

- Dec 20-23, 2011 **Quantum cluster algebras and Lusztig's dual canonical bases**  
60 min, Infinite Analysis 11 Winter School, Osaka
- Nov 21, 2011 **The quantum shuffle algebra and Lusztig's canonical basis**  
90 min, Leibniz University Hanover
- Sep 19-21, 2011 **Cluster algebras and quantum shuffles**  
20 min, Meeting of the German Mathematical Society, Cologne
- Jun 13-17, 2011 **2-Calabi-Yau categories and cluster algebras**  
60 min, Cluster Algebras and Semicanonical Basis, Eugene
- Mar 16, 2011 **Cluster algebras and Lusztig's canonical basis**  
60 min, Marburg University
- Mar 1-4, 2011 **Quantum cluster algebras and dual canonical bases**  
Poster presentation, Darstellungstheorie SPP, Münster
- Feb 20-26, 2011 **Quantum cluster algebras and dual canonical bases**  
30 min, Oberwolfach
- Jan 18, 2011 **Quantum cluster algebras and the dual canonical basis**  
90 min, University of Kiel
- Aug 6-15, 2010 **A quantum cluster algebra of Kronecker type and the dual canonical basis**  
20 min, XIV ICRA, Tokyo
- Jun 14, 2010 **A quantum cluster algebra of Kronecker type and the dual canonical basis**  
60 min, Séminaire d'Algèbre, l'Institut Henri Poincaré, Paris
- Apr 10-16, 2010 **Quantum cluster algebras and the dual canonical basis**  
Poster presentation, Darstellungstheorie SPP, Bad Honnef
- Nov 20-22, 2009 **The quantized cluster algebra structure of the dual canonical basis associated with the Kronecker quiver**  
20 min, Graduate Students' Meeting of the SFB 45, Essen
- Nov 7-9, 2008 **Quiver representations and cluster algebras**  
20 min, Graduate Students' Meeting SFB 45, Königswinter

### Professional activities

Journals refereed: Advances in Mathematics, Transaction of the American Mathematical Society, International Mathematics Research Notices, Algebras and Representation Theory, SIGMA, Communications in Algebra, Electronic Journal of Combinatorics, European Journal of Combinatorics, Glasgow Mathematical Journal, Documenta Mathematica

Zentralblatt Math. reviewer

Departmental committees: head of the selection committee for student tutors (Bielefeld, 2014-2017), member of a hiring committee (Bielefeld, 2015), working group for the promotion of the master student program (Bielefeld, 2016), postdoctoral representative in the Equality, Diversity and Inclusivity (EDI) committee (Kent, 2018-2020)

Professional memberships: German Mathematical Society, SFB 701, SFB 45, Board of the German Society for Mathematical Olympiads (2010-2018)

Co-organizer of the Bielefeld Representation Theory Seminar (2011-2017), co-organizer of the Seminar on Mathematical Physics and Integrable Systems at Kent (since 2018)

Reviewed grants for: NSA Mathematical Science Grant

Participant at Induction Course for New Lecturers (Cambridge, 2018)

Outreach talks given at: Jugend trainiert Mathematik (2007-2017,2021-now),  
Mathematische Sommerakademie Kranenburg (2008-2016), Mathe Plus (2015-2017),  
Royal Institution Masterclass (2018)

Conferences co-organized:

Aug 2017: Summer School on Gentle Algebras, Bad Driburg

Jul 2016: 19th NWDR Workshop, Bielefeld

Aug 215: Summer School on Koszul duality, Bad Driburg

Nov 2014: Maurice Auslander Memorial Workshop, Bielefeld

Jul 2012: 16th NWDR Workshop, Bielefeld

Aug 2011: Summer School on Representations of the General Linear Group, Bad Driburg

Research stays:

Jan 2018: Université du Québec à Montréal

Aug 2017: University of Graz

Aug 2015 - Sep 2015: Nagoya University

Dec 2014: Thematic Program on Cluster Algebras, KIAS, Seoul

Oct 2014: Leicester University

Aug 2012 - Oct 2012: Cluster Algebras Program, MSRI, Berkeley

## Teaching activities

University of Kent:

Jan 2019 - Jul 2019    Lecture Course Linear Mathematics

Bielefeld University:

Oct 2016 - Mar 2017    Teaching assistant, Lineare Algebra I (Krause)

Apr 2016 - Sep 2016    Seminar Algebraische Methoden

Oct 2015 - Mar 2016    Teaching assistant, Darstellungstheorie von Algebren III (Krause)

Apr 2015 - Sep 2015    Teaching assistant, Darstellungstheorie von Algebren II (Vossieck)

Apr 2015 - Sep 2015    Seminar Mathematische Physik (with Kieburg)

Oct 2014 - Mar 2015    Teaching assistant, Darstellungstheorie von Algebren I (Krause)

Apr 2014 - Sep 2014    Seminar Algebra (with Krause)

Apr 2014 - Sep 2014    Teaching assistant, Lineare Algebra II (Bauer)

Oct 2013 - Mar 2014    Lecture course Cluster algebras

Apr 2013 - Oct 2013    Seminar Kombinatorik und Gruppentheorie

Oct 2012 - Mar 2013    Lecture course Vertiefung Gruppentheorie

Apr 2012 - Sep 2012    Teaching assistant, Lineare Algebra II (Krause)

Apr 2012 - Sep 2012    Seminar Einführung in Cluster-Algebren (with Krause und Mahrt)

Oct 2011 - Mar 2012    Teaching assistant, Lineare Algebra I (Krause)

Apr 2011 - Sep 2011    Teaching assistant, Introduction to representation theory (Krause)

University of Bonn:

Oct 2005 - Mar 2006    Teaching assistant, Analysis III (Franke)

Apr 2005 - Sep 2005 Teaching assistant, Analysis II (Franke)

### **PhD students**

Florian Gellert, Ph.D. 2017, Bielefeld: Sequential structures in cluster algebras and representation theory