

Department of Mathematical Sciences
University of Copenhagen
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NATIONALITY

Austrian

EMPLOYMENT

10/2017 - present **University of Copenhagen**
Postdoctoral fellow
Marie-Curie fellow since 9/2019

EDUCATION

10/2013 - 05/2017 **University of Oxford, Lincoln College**
05/2017 DPhil in Mathematics
Commutative K-theory (Advisor: Prof. Ulrike Tillmann)

10/2011 - 09/2013 **Ludwig-Maximilians-University, Munich**
09/2013 MSc in Mathematics (distinction)

07/2010 - 08/2011 **Max Planck Institute for Physics, Munich**
Diploma student

10/2008 - 06/2012 **Technical University, Munich**
06/2012 BSc in Mathematics (distinction)
08/2011 Diploma in Physics (5 years degree, distinction)

04/2007 - 07/2008 **Technical University, Graz**
BSc in Technical Physics and Technical Mathematics (not completed)

AWARDS, PRIZES AND SCHOLARSHIPS

- Marie Curie Individual Fellowship 2018, European Union (€ 207.312)
- 150th Anniversary Postdoctoral Mobility Grant 2017, London Mathematical Society (£ 8.000)
- EPSRC Scholarship, 10/2013 - 04/2017
- Carathéodory Prize for my Master thesis, LMU Munich, 09/2014
- Best Study Award for Bachelor Mathematics for the best overall grade, TU Munich, 06/2013
- Scholar of the Cusanuswerk 04/2009 - 09/2013
- 37th International Physics Olympiad, Singapore, Honourable mention 07/2006

PUBLICATIONS AND PREPRINTS

Preprints

- *On families of nilpotent subgroups and associated coset posets* (with B. Villarreal)
Preprint (2021) 1–14, [arXiv:2104.06869](#)
- *On the second homotopy group of spaces of commuting elements in Lie groups* (with A. Adem and J. M. Gómez)
Preprint (2020) 1–52, submitted, [arXiv:2009.09045](#)
- *A remark on the group-completion theorem*
Preprint (2017) 1–9, [arXiv:1709.02036](#)

Published articles

- *Higher generation by abelian subgroups in Lie groups* (with O. Antolín-Camarena and B. Villarreal)
To appear in *Transform. Groups* (2021) 1–13, [arXiv:2009.12257](#)
- *Commuting matrices and Atiyah's Real K-theory* (with M. Hausmann)
Journal of Topology 12 (2019) 832 – 853
- *Classifying spaces for commutativity of low-dimensional Lie groups* (with O. Antolín-Camarena and B. Villarreal)
Math. Proc. Cambridge Phil. Soc. 169 (2020), 433–478
- *The spectrum for commutative complex K-theory*
Algebraic and Geometric Topology 18 (2018) 1205 –1249
- *Variable-flavor-number scheme for final state jets in thrust* (with A. Hoang, I. Jemos, V. Mateu and P. Pietrulewicz)
Phys. Rev. D 90, 114001 (2014)
- *Two loop soft function for secondary massive quarks* (with A. Hoang, I. Jemos and P. Pietrulewicz)
Phys. Rev. D 89, 014035 (2014)
- *Secondary heavy quark production in jets through mass modes* (with A. Hoang, I. Jemos and P. Pietrulewicz)
Phys. Rev. D 88, 034021 (2013)

Conference reports

- *On the space of commuting pairs in a Lie group.* Mathematisches Forschungsinstitut Oberwolfach.
Report No. 23/2020, [doi:10.14760/OWR-2020-23](#)

Theses

- *Commutative K-theory.* Ph.D thesis, Oxford (2017, Advisor: Prof. Ulrike Tillmann)
- *On Poincaré rings of manifolds.* MSc thesis, LMU (2013, Advisor: Prof. Dieter Kotschick)
- *Computational simulation of fluid dynamics.* BSc thesis, TU Munich (2012, Advisor: Prof. Jürgen Richter-Gebert)
- *Massive gluino effects in event shape distributions.* Diploma thesis, TU Munich (2011, Advisor: Prof. André Hoang)

ACADEMIC SERVICE

- I peer reviewed articles for several journals in Mathematics.
- Organiser of a workshop on “Simplicial complexes”, Copenhagen Centre for Geometry and Topology, 17/08/2020 - 21/08/2020
- Organiser of the Algebra & Topology seminar in Copenhagen (with Tobias Barthel), 10/2017 - 04/2019

TALKS ETC.

Invited talks

18/02/2021	Topology seminar, UNAM Mexico City
01/12/2020	Topology seminar, LMU Munich
18/11/2020	Topology seminar, University of Aberdeen
02/11/2020	Topology seminar, Bilkent University
09/08/2020 - 15/08/2020	<i>On the space of commuting pairs in a Lie group</i> , Oberwolfach workshop 2033 “Co-homology of Finite Groups: Interactions and Applications”
05/02/2020	<i>Colimits of nilpotent groups and the Engel condition</i> , Topology seminar, UBC
22/08/2017	<i>Commutative complex K-theory</i> , Topology seminar, IUPUI Indianapolis
22/06/2017	<i>Commutative complex K-theory (2/2)</i> , Topology seminar, PIMS and UBC
15/06/2017	<i>Commutative complex K-theory (1/2)</i> , Topology seminar, PIMS and UBC
31/03/2017	Workshop “Subfactors, higher geometry, higher twists and almost Calabi-Yau algebras”, Isaac Newton Institute, Cambridge
05/01/2017	Algebra/Topology seminar, University of Copenhagen
28/11/2016	Topology seminar, University of Oxford
02/08/2016 - 05/08/2016	31st Summer Conference on Topology and its Applications, University of Leicester
09/06/2016	Topology seminar, University of Regensburg
09/06/2016	Graduiertenkolleg Kolloquium, University of Regensburg
03/05/2016	Oxford-Aberdeen-Cambridge manifolds meeting, University of Aberdeen

Contributed presentations

17/08/2020	<i>On the coset poset of 2-nilpotent subgroups in a 3-nilpotent group</i> , Workshop “Simplicial Complexes”, Copenhagen Centre for Geometry and Topology
14/07/2011	Poster presentation at the graduate school “Particles and Interactions”, University of Vienna
15/06/2011 - 17/06/2011	Annual meeting of the Swiss and Austrian Physical Societies, EPFL Lausanne
28/03/2011 - 01/04/2011	Annual conference of the German Physical Society, Karlsruhe
28/03/2010 - 01/04/2010	TopMath Spring school on Trends in probability, Herrsching

Conferences etc. attended (selection)

20/01/2020 - 24/01/2020	Workshop on polyhedral products in homotopy theory, Field Institute Toronto
24/06/2019 - 28/06/2019	SYM 10 Years Old Conference, University of Copenhagen
09/07/2018 - 13/07/2018	Young Topologists Meeting, University of Copenhagen
09/04/2018 - 13/04/2018	Masterclass on Rigidity and algebraic models in stable homotopy theory, University of Copenhagen
12/03/2018 - 16/03/2018	Masterclass on Tensor triangular geometry and equivariant stable homotopy theory, University of Copenhagen
13/03/2017	Oxford-Aberdeen-Cambridge manifolds meeting, University of Oxford
09/09/2016	Oxford-Aberdeen-Cambridge manifolds meeting, University of Cambridge
27/06/2016 - 01/07/2016	“Topology of manifolds: a conference in honour of Michael Weiss’ 60th birthday”, Lisbon
22/02/2016	Oxford-Aberdeen-Cambridge manifolds meeting, University of Oxford
03/08/2015 - 07/08/2015	Summer school on Algebraic K-theory and Trace methods, University of Regensburg
04/05/2015 - 08/05/2015	School “Homotopy theory, manifolds, and field theories”, Hausdorff Research Institute for Mathematics, Bonn
07/07/2014 - 12/07/2014	West Coast Algebraic Topology Summer School, University of British Columbia
30/06/2014 - 04/07/2014	Young Topologists Meeting, University of Copenhagen
06/06/2014	Young Topology Meeting UK, Imperial College London

Other talks (selection)

05/11/2015	<i>Deformation K-theory</i> , Junior Geometry and Topology seminar, University of Oxford
11/03/2015	<i>Zabrodsky Mixing</i> , Junior Topology and Group Theory seminar, University of Oxford
18/06/2014	<i>Waldhausen K-Theory</i> , Junior Topology and Group Theory seminar, University of Oxford

EXTENDED VISITS

05/2017 - 09/2017	University of British Columbia, Vancouver Visiting Alejandro Adem
09/2012 - 10/2012	University of Vienna Visiting André Hoang
09/2008 - 10/2008	University of Innsbruck Visiting the Institute for Quantum Optics

TEACHING EXPERIENCE

Training

- Course on supervision of BSc and MSc students, Dpt. of Science Education, Univ. Copenhagen (09/03 and 08/04/2021)

Students

- Master thesis
 - Nicolas-Domenic Reiter “Deformation K-theory” (Copenhagen, 2020)
- Student projects (9 weeks each):
 - Nicolas-Domenic Reiter “T-spaces and spectra” (Copenhagen, 2019)
 - Emilie Søgaaard “Invariant integration and representations of S^1 ”, (Copenhagen, 2018)
 - Anders Pedersen “Algebraic K-theory of permutative categories”, (Copenhagen, 2017)

University of Copenhagen

- Categories and Topology (5th year), Lecturer (jointly with Jesper Grodal), 2020 Block 1
- Homological Algebra (4th year), Lecturer, 2019 Block 2
- Algebraic Topology 1.5 (4th year), Lecturer (jointly with Thomas Wasserman), 2018 Block 3
- Homological algebra (4th year), Lecturer, 2018 Block 2
- Algebraic Topology 1.5 (4th year), Teaching assistant, 2017 Block 3
- Homological algebra (4th year), Teaching assistant, 2017 Block 2

University of Oxford

- Constructive mathematics (1st year), Tutor at Balliol College, 2016 Trinity
- Dynamics (1st year), Tutor at Balliol College, 2016 Hilary
- Projective Geometry (2nd year), Tutor at Lincoln College, 2015 Trinity term
- Geometry (1st year), Tutor at Balliol College, 2015 Michaelmas term
- Algebraic Topology (4th year), Class tutor, 2015 Michaelmas term

- Projective Geometry (2nd year), Tutor at Lincoln College, 2014 Trinity term
- Topology (2nd year revisions), Tutor at Merton College, 2014 Trinity term
- Topology (2nd year), Tutor at Merton College, 2014 Hilary term
- Algebraic Topology (4th year), Teaching assistant, 2014 Michaelmas term

Ludwig-Maximilians-University Munich

- Geometry and Topology of Surfaces (2nd year), Class tutor, 2013 Summer term
- Measure theory and multivariable calculus (2nd year), Class tutor, 2012 Winter term

MEMBERSHIPS

- ÖMG Austrian Mathematical Society, 2019 - present
- LMS London Mathematical Society, 2014 - present
- DMV German Mathematical Society, 2013 - present

NON-ACADEMIC SERVICE

- Committee member Cusanuswerk Munich (scholarship foundation), 02/2011 - 02/2012
- Voluntary paramedic with the Austrian Red Cross, 12/2006 - 12/2009

ACADEMIC REFERENCES

Prof. Ulrike Tillmann (*PhD advisor*)
 Mathematical Institute
 Andrew Wiles Building
 Woodstock Road
 Oxford OX2 6GG, UK
 tillmann@maths.ox.ac.uk

Prof. Jesper Grodal (*Postdoc mentor*)
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 2100 Copenhagen, Denmark
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Prof. Alejandro Adem (*Collaborator*)
 Department of Mathematics
 University of British Columbia
 adem@math.ubc.ca

Prof. Nathalie Wahl (*Teaching mentor*)
 Department of Mathematical Sciences
 University of Copenhagen
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 2100 Copenhagen, Denmark
 wahl@math.ku.dk