

### Area of Interest

Algebraic geometry, topology and combinatorics of linear algebraic groups, homogeneous spaces and their loop spaces in motivic homotopy theory

### Education

- May 2017 – now **Zertifikatsprogramm** **Hochschuldidaktische** **Qualifizierung,**  
Universität Osnabrück, Osnabrück, Germany.  
(currently at 20 of 200 work units)
- Jun 2012 – Jun 2016 **PhD in Mathematics**, Albert-Ludwigs-Universität, Freiburg, Germany.  
Thesis: “**Motivic Cell Structures for Projective Spaces over Split Quaternions**”  
Area: Algebraic Geometry and Algebraic Topology, grade: “magna cum laude” (1)  
Advisor: **Matthias Wendt**
- Oct 2008 – Nov 2011 **Diploma**, Albert-Ludwigs-Universität, Freiburg.  
Mathematics with minor physics, grade “sehr gut” (1)  
Thesis: “**Matsumoto’s theorem and  $A^1$ -homotopy theory**”  
Advisors: **Matthias Wendt** and **Annette Huber-Klawitter**
- Oct 2009 – May 2010 **Term abroad**, Université Denis Diderot (VII), Paris, France.  
M2 (second year of masters program), with the ERASMUS program
- Oct 2006 – Sep 2008 **Undergraduate studies**, KIT (Karlsruhe Institute of Technology),  
Karlsruhe, Germany.  
Mathematics with minor computer science.

### Employment

- Apr 2017 – Oct 2017 **Parental part-time (50%).**
- Oct 2016 – now **Wiss. Mitarbeiter (PostDoc)**, Universität Osnabrück,  
Osnabrück, Germany.
- Apr 2016 – Sep 2016 **Wiss. Mitarbeiter (PostDoc)**, Albert-Ludwigs-Universität,  
Freiburg, Germany.
- Jul 2013 – Dec 2013 **Parental leave.**
- Jan 2012 – Jun 2012 **Wiss. Mitarbeiter**, Albert-Ludwigs-Universität,  
Freiburg, Germany, within DFG Research Group 570.  
“Algebraic Cycles and L-Functions”
- Dec 2010 – Sep 2011 **Wiss. Hilfskraft (TA)**, Albert-Ludwigs-Universität, Freiburg.  
“Complex Analysis II”, “Commutative Algebra and Algebraic Geometry”
- Oct 2008 – Sep 2009 **Wiss. Hilfskraft (TA)**, Albert-Ludwigs-Universität, Freiburg.  
“Topology”, “Complex Analysis I”
- Oct 2006 – Sep 2008 **Wiss. Hilfskraft**, Forschungszentrum Informatik, Karlsruhe, Germany.  
Programming in the area **Semantic Web/ Personal Knowledge Management.**

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## Honours, Awards and Grants

- Oct 2017 **Grant for a Workshop**, within DFG SPP 1786, Osnabrück, Germany.  
Covering travel expenses for participants (with **Toan Nguyen** and **Martin Frankland**)
- Oct 2016 – now **Member**, GK1916 (DFG-Graduiertenkolleg “Combinatorial Structures in Geometry”), Osnabrück, Germany.
- Jun 2012 – Mar 2016 **PhD Scholarship**, Studienstiftung (German National Academic Foundation), Bonn, Germany.
- Feb 2015 **Grant for a “Studierendenkolleg”**, DMV (German Mathematical Society), Berlin, Germany.  
Covering travel expenses for participating students (with **Anja Wittmann**)
- Jan 2012 – Sep 2016 **Associated Member**, GK1821 (DFG-Graduiertenkolleg “Cohomological Methods in Geometry”), Freiburg, Germany.
- Feb 2010 – Dec 2011 **Scholarship for undergraduate studies**, Studienstiftung, Bonn, Germany.
- Oct 2009 – May 2010 **ERASMUS-Grant for studying abroad**, European Commission.

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## Publications and Preprints

- May 2018 **preprint: Motivic Cell Structures for Spherical Varieties**, (submitted)  
arXiv:1805.04338.
- May 2016 **On  $A^1$ -fundamental groups of isotropic reductive groups**, with Matthias Wendt, *Comptes Rendus Mathématique, Académie des Sciences. Paris* 354 (2016), Nr. 5, p. 453–458. doi:10.1016/j.crma.2016.01.026 (arXiv:1207.2364).

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## Invited Talks

- Jun 2016 **From division algebras to motivic cellularity**, Topology Seminar, Univ. of Osnabrück.
- Nov 2015 **Motivic Cell Structures on Projective Spaces over Composition Algebras**, Univ. of Grenoble.
- Nov 2015 **Projective Spaces over Split Forms of Division Algebras**, Univ. of Duisburg-Essen.
- Jun 2015 **Motivic Homotopy of 2-Orbit Varieties**, SFB-Seminar, Univ. of Regensburg.
- May 2015 **Motivic Cell Structures for 2-Orbit Varieties**, Algebra seminar, Univ. of Warwick.
- May 2013 **Matsumoto’s Theorem in Motivic Homotopy Theory**, Topology seminar, Univ. of Wuppertal.
- Jan 2013 **Matsumoto’s Theorem in Motivic Homotopy Theory**, Emmy-Noether seminar, FAU Erlangen-Nürnberg.
- Dec 2012 **Matsumoto’s Theorem in Motivic Homotopy Theory**, ProDoc, ETH Zürich.
- Sep 2012 **Matsumoto’s Theorem in Motivic Homotopy Theory**, Student’s conference of the DMV, Saarbrücken.

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## Selected Seminar Talks

- Sep 2012 **Tannakian Categories**, Workshop **Multiple Zeta-Values** (organized by J.Ayoub, S.O.Gorchinskiy, G.Wüstholz) of the ETH Zürich, in Alpbach, Austria.
- Aug 2012 **Grothendieck's Monodromy Theorem**, Sommerakademie **Galois representations of function fields** (organized by H.Esnault, M.Kerz) of the Studienstiftung, in Görlitz, Germany.
- Jul 2011 **The Period Isomorphism**, with Peter Wieland, Workshop **Motives, periods and transcendence** (organized by J.Ayoub, A.Huber, A.Kresch, G.Wüstholz) of the ETH Zürich, in Alpbach, Austria.

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## Organizational Activities and Service

- May 2018 – now **Reviews for zbMATH (Zentralblatt)**.
- Oct 2017 **Workshop on motivic and equivariant homotopy theory, Osnabrück**, organized with Manh Toan Nguyen and Martin Frankland, funded by DFG SPP 1786 and DFG GK 1916.
- Apr 2017 – now **Member of the board of the Institute of Mathematics, Osnabrück**.
- Feb 2015 **Studierendenkolleg Topology and Big Data, Freiburg**, organized with Anja Wittmann, funded by DFG GK 1821 and a DMV grant.
- Nov 2014 **Workshop on Non-Computational Computer Tools for Pure Math, Freiburg**, funded by DFG GK 1821.
- 2010 – 2011 Commission for Studies and Teaching, University of Freiburg

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## Teaching Experience

- Oct 2018 – Mar 2019 **Seminar “Knoten, Zöpfe und Gruppen”**, for Bachelor and Master students.
- Oct 2018 – Mar 2019 **Assistent für Analysis I**, assistant to Prof. O.Röndigs.
- Apr 2018 – Sep 2018 **Assistent für Grundkurs Mathematik II (BEU)**, assistant to Dr. J.Plümer.
- Oct 2017 – Feb 2018 **Assistent für Grundkurs Mathematik I (BEU)**, assistant to Dr. J.Plümer.
- Oct 2016 – Mar 2017 **Assistent für Zahlentheorie**, teaching assistant to Prof. H.Brenner.
- Apr 2016 – Sep 2016 **Assistent für Algebraische Zahlentheorie, Seminar “Codimension 2”**, Exercises for a course of F.Hörmann on algebraic number theory.
- Oct 2014 – Feb 2015 **Seminar on Homogeneous and Symmetric Spaces**, for GK 1821.
- Apr 2013 – Jul 2013 **Seminar on Rational Homotopy Theory and Applications**, organized with Jan Weidner, **What is ...? Seminar**, both for GK 1821. **Seminar on Stable Homotopy Theory**, teaching assistant to Prof. S.Goette .
- Oct 2012 – Feb 2013 **Seminar on Motives**, for graduate students.

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## Personal

I am married and we have three kids: a child born in July 2013 and twins born in July 2016.

## Further attended events

In addition to those listed as organizational activities, selected seminar talks or invited talks, and numerous seminars and courses, I have been participating in the following academic events:

- May 2018 Essen, Workshop on **Motivic Homotopy Theory and Refined Enumerative Geometry**
- Mar 2018 Osnabrück, Graduate Student Meeting on **Applied Algebra and Combinatorics**
- Feb 2018 Freiburg, 3 weeks visiting scientist at FRIAS Research Focus: **Cohomology in Algebraic Geometry and Representation Theory**
- Dec 2017 Osnabrück, Workshop on **Algebraic Methods in Statistics**
- Nov 2017 Berlin, Berlin–Leipzig Seminar on **Algebra, Geometry and Combinatorics**
- May 2017 Bielefeld, Conference **Triangulated Categories and Geometry**
- Apr 2017 Regensburg, Conference **Invertibility and Duality in DAG and Homotopy Theory**
- Mar 2017 Wuppertal, **SPP 1786 Jahrestagung**
- Nov 2016 Osnabrück, **26th NRW Topology Meeting**
- June 2016 Oberwolfach, Workshop on **K-Theory and Motivic Cohomology**
- June 2016 Freiburg, Workshop on **Homotopical Approaches to Categories and Geometry**
- May 2016 Essen, Workshop on **Motives and Derived Algebraic Geometry**
- Mar 2016 Freiburg, 5 Lectures on **Geometric Complexity Theory** by Jesko Hüttenhain (organized)
- Dec 2015 Bonn, Doktorandenforum der Studienstiftung, where I gave a short talk on “**Textbook 2.0**”
- Sep 2015 Hamburg, Mini-Symposium “**Motivic Homotopy Theory and its applications to problems in Algebra and Algebraic Geometry**” on the Annual Meeting of the German Mathematical Society.
- Jul 2015 Freiburg, Summer School “**Manifolds and K-Theory**”
- May 2015 Strasbourg, Conference “**Géométrie, arithmétique et physique: autour des motifs**”
- Sep 2014 Berlin, Conference VBAC “**Algebraic Varieties: Bundles, Topology, Physics**”
- Jul 2014 Alpbach, Workshop “**Periods and heights of CM abelian varieties**” of the ETH Zürich
- May 2014 Freiburg-Karlsruhe-Tübingen-Frankfurt, Southwest Arithmetic Seminar, I gave a talk about my ongoing PhD thesis
- Jun 2014 Essen, Workshop: **Motivic Homotopy Groups of Spheres**
- Sep 2013 Budapest, Summer School and Conference on **Motivic Galois Groups**
- Aug 2013 Freiburg, Summer School on **Category  $\mathcal{O}$**
- Jul 2013 Freiburg, Summer School on **Regulators and smooth algebraic K-theory**
- Jul 2013 Freiburg, Lecture Series on **Spherical Varieties** by Dr. Stéphanie Cupit-Foutou, which I co-organized with Daniel Greb
- Jun 2013 Berlin, Conference on **Arithmetic Algebraic Geometry**
- Mar 2013 Bingen (Mainz), Spring School on **Feynman Graphs and Motives**
- Jul 2012 Freiburg, Summer School Introduction to **Geometric Langlands**
- Jun 2012 Berlin, Summer School on **Topology and Groups**
- May 2012 Strasbourg, Semaine speciale “**Cohomologies & Automorphic Forms**”
- May 2012 Freiburg-Karlsruhe-Tübingen-Frankfurt, Southwest Arithmetic Seminar, “**Attaching Galois representations to modular forms**”
- Mar 2012 Zürich, **Number Theory Days**
- Feb 2012 Regensburg, **Algebraic Cycles and L-Functions** (final workshop)
- Aug 2011 Regensburg, Summer School on **Rigidity and the Friedlander-Milnor conjecture**
- May 2011 Freiburg-Karlsruhe-Tübingen, Southwest Arithmetic Seminar, “**Billard und Teichmüllerkurven**”
- Jul 2011 Salem, Sommerakademie der Studienstiftung, working group on **systolic geometry**, where I gave an introductory talk on aspherical manifolds.
- Sep 2010 Bonn, Workshop on **Geometric Aspects of Motivic Homotopy Theory**
- Sep 2010 Düsseldorf, Workshop on **Personal Knowledge Management**, at a HCI conference
- Aug 2010 Rot an der Rot, Sommerakademie der Studienstiftung, working group on **information theory**, where I gave an introductory talk to relative entropy.
- Jun 2010 Trieste, Summer School on **Hodge Theory and Arithmetic Aspects**, ICTP Trieste, Italy
- Feb 2010 Freiburg, Winter School “**The Decomposition Theorem and the Topology of Algebraic Maps**”
- 2008 Strasbourg, one-term course on “**deformations of Galois representations**” given by Prof. H. Carayol.