

PERSONAL INFORMATION

Mathematical Institute
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Born on June 15, 1986; citizen of Austria.

RESEARCH INTERESTS

My research interests intersect with *algebraic topology and mathematical physics*;
 more precisely, with functorial field theories and cobordisms, higher category theory, factorization algebras, and derived algebraic geometry,

CAREER

- **Associate Professor at Norwegian University of Science and Technology, Trondheim** from Aug. 2018
 Tenure-track position
- **Research Fellow at University of Oxford** since Apr. 2017
 Funded by an Advanced Postdoc.Mobility Fellowship from the Swiss National Science Foundation
- **Postdoctoral Researcher at Max Planck Institute for Mathematics, Bonn** Jan. 2015 – Mar. 2017
 Partially funded by an Early Postdoc.Mobility Fellowship from the Swiss National Science Foundation
- **Visitor at Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France** Oct.–Dec. 2014
- **Ph.D. in Mathematics, ETH Zurich** Aug. 26, 2014
 Advisor Damien Calaque, Coreferees Giovanni Felder & Bertand Toën

PUBLICATIONS AND PREPRINTS

- [1] Owen Gwilliam and Claudia Scheimbauer. Duals and adjoints in the factorization higher Morita category. 2018. Available at <https://people.maths.ox.ac.uk/scheimbauer/GwilliamScheimbauer.pdf> and submitted to arXiv (to appear on May 1st, 2018).
- [2] Damien Calaque and Claudia Scheimbauer. A note on the (∞, n) -category of cobordisms. 2015. Accepted for publication in *Algebraic and Geometric Topology*. Also available at arXiv:1509.08906, based on the second author’s PhD thesis.
- [3] Julia E. Bergner, Angèlica M. Osorno, Viktoriya Ozornova, Martina Rovelli, and Claudia I. Scheimbauer. 2-Segal sets and the Waldhausen construction. *Topology and its Applications*, 235:445 – 484, 2018. Also available at arXiv:1609.02853.
- [4] Theo Johnson-Freyd and Claudia Scheimbauer. (Op)lax natural transformations, twisted field theories, and the “even higher” Morita category of E_d -algebras. February 2015. *Advances in Mathematics* 307 (2017) pp. 147-223. Also available at arXiv:1502.06526.
- [5] Kevin Costello and Claudia Scheimbauer. Lectures on mathematical aspects of (twisted) supersymmetric gauge theories. In Damien Calaque and Thomas Strobl, editors, *Mathematical Aspects of Quantum Field Theories*, Mathematical Physics Studies. Springer International Publishing, 2015. Also available at arXiv:1401.2676.
- [6] Claudia Scheimbauer. *Factorization Homology as a Fully Extended Topological Field Theory*. PhD thesis, ETH Zurich, 2014. Available at <http://people.mpim-bonn.mpg.de/scheimbauer/ScheimbauerThesis.pdf>.

INVITED CONFERENCE AND WORKSHOP TALKS

Apr. 2018 *Dualizability in the higher Morita category*, NRW Topology meeting, Bonn, Germany

- Apr. 2018 *From topological field theories to “higher” algebra.. and back?*, Women at the intersection of mathematics and theoretical physics, DESY Hamburg, Germany
- Feb. 2018 *Dualizability in the geometric higher Morita category and consequences for fully extended TFTs*, Workshop on Factorisation Algebras and Homology and the Cobordism Hypothesis, ANR SAT, St.Étienne de Tinée, France
- Jan. 2018 *Fully extended functorial field theories and dualizability in the higher Morita category*, Scottish Topology Seminar, Edinburgh, UK
- Aug. 2017 *Fully extended functorial field theories and dualizability in the higher Morita category*, Topology Ecuador 2017, Galápagos Science Center, Universidad San Francisco de Quito, San Cristóbal, Ecuador
- Jul. 2017 *A factorization view on states and observables in low-dimensional topological field theories*, parallel session at String-Math 2017, Universität Hamburg, Germany
- May 2017 *From factorization algebras to twisted functorial field theories - the topological case*, Foundational and structural aspects of gauge theories, Mainz Institute for Theoretical Physics, Johannes Gutenberg Universität, Germany
- Dec. 2016 *An introduction to factorization algebras towards topological field theories*, Oberwolfach Workshop: New interactions between homotopical algebra and quantum field theory, Oberwolfach, Germany
- Dec. 2016 *Derived symplectic geometry and AKSZ topological field theories*, Algebra and Geometry Meeting, Universitat de Barcelona, Spain
- Aug. 2016 *The Waldhausen construction and 2-Segal spaces*, 31st Summer Conference on Topology and its Applications, Special Session on Algebraic Topology, University of Leicester, UK
- July 2016 *2-Segal spaces and the Waldhausen construction*, Oberwolfach Workshop: Topologie, Oberwolfach, Germany
- May 2016 *Factorization algebras and (twisted) functorial field theories - the topological case*, Oberwolfach Workshop: Factorization Algebras and Functorial Field Theories, Oberwolfach, Germany
- Jan. 2016 *Fully extended semi-classical TFTs and linear BV quantization*, Homotopical Methods in Quantum Field Theory, IBS Center for Geometry and Physics, Pohang, South Korea
- Oct. 2015 *(Op)lax natural transformations for higher categories, relative quantum field theories, and the “even higher” Morita category*, Colloque 2015 du GdR Topologie Algébrique et Applications, Institut de Mathématiques de Toulouse, France
- Oct. 2015 *(Op)lax natural transformations for higher categories and relative field theories*, Higher topological quantum field theory and categorical quantum mechanics, ESI Vienna, Austria
- June 2015 *(Op)lax natural transformations for higher categories and two applications*, Workshop on Homotopy theory, manifolds, and field theories, MPIM Bonn, Germany
- May 2015 *Factorization algebras and fully extended topological field theories*, Second Meeting for Young Women in Mathematics, Universität Freiburg, Germany
- Oct. 2014 *Factorization homology as a fully extended topological field theory*, Higher Structures in Geometry and Physics 2014, Université de Genève, Switzerland
- Oct. 2014 *Factorization homology as a fully extended topological field theory*, Homological Methods in Quantum Field Theory, Simons Center for Geometry and Physics, Stony Brook, USA
- June 2014 *Factorization homology as a fully extended topological field theory*, 41st ARTIN meeting, University of Edinburgh, UK

INVITED SEMINAR TALKS

- Apr. 2018 *From topological field theories to “higher” algebra*, Geometry, Algebra, Mathematical Physics and Topology Seminar, University of Cardiff, UK
- Mar. 2018 *Fully extended functorial field theories and dualizability in the higher Morita category*, Séminaire de Topologie Algébrique, Université Paris 13, France
- Jan. 2018 *The homotopy (bi)category*, Seminar in Pure Mathematics, University of Leicester, UK
- Dec. 2017 *Fully extended functorial field theories and dualizability in the higher Morita category*, Perimeter Institute, Waterloo, Canada
- Dec. 2017 *Introduction to fully extended twisted topological field theories and the Cobordism Hypothesis and Dualizability in the higher Morita category and examples of fully extended twisted topological field theories*, Notre Dame, South Bend IN, USA

- Nov. 2017 *Fully extended functorial field theories and dualizability in the higher Morita category*, Topology Seminar, Sheffield, UK
- Nov. 2017 *Constructing extended AKSZ topological field theories in derived algebraic geometry using an explicit model for the higher category of bordisms*, Topology Seminar, NTNU Trondheim, Norway
- May 2017 *Factorization homology, duality, and topological field theories*, Topological Activities, KTH, Stockholm, Sweden
- May 2017 *Fully extended twisted field theories*, Topology Seminar, University of Oxford, UK
- Mar. 2017 *Fully extended twisted field theories*, Topology Seminar, UC Berkeley, USA
- Jan. 2017 *Algebraic structures in topological field theories*, Topology Seminar, Trondheim, Norway
- Nov. 2016 *Fully extended twisted field theories*, Oberseminar, Max Planck Institut für Mathematik, Bonn, Germany
- Nov. 2016 *Fully extended twisted field theories*, Topology Seminar, EPFL, Lausanne, Switzerland
- Sep. 2016 *Twisted field theories and the higher Morita category*, Topology Day & GAGA seminar, Utrecht University
- May 2016 *(Twisted) field theories and factorization algebras*, Algebra/Topology Seminar, University of Copenhagen, Denmark
- Apr. 2016 *Derived symplectic geometry and AKSZ topological field theories*, Geometry/Physics Seminar, Northwestern University, USA
- Feb. 2016 *Derived symplectic geometry and AKSZ topological field theories*, MAGIC Seminar, Imperial College London, UK
- Nov. 2015 *The (∞, n) -category of cobordisms and two examples of fully extended TFTs*, Oberseminar Topologie, Westfälische Wilhelms-Universität Münster, Germany
- Nov. 2015 *The (∞, n) -category of cobordisms*, SFB Seminar, Universität Regensburg, Germany
- Nov. 2015 *Factorization algebras and higher topological field theories*, Mathematical Physics Seminar, University of York, UK
- Nov. 2015 *Two examples of fully extended TFTs*, Pizza Seminar on Mathematical Physics, University of Oxford, UK
- June 2015 *Higher categories, factorization homology, and fully extended TFTs*, AG-Seminar Algebra, TU Darmstadt, Germany
- Apr. 2015 *Factorization algebras and fully extended topological field theories*, Oberseminar introductory talk, MPIM Bonn, Germany
- Mar. 2015 *Factorization homology as a fully extended topological field theory*, Séminaire de topologie algébrique, Université catholique de Louvain, Belgium
- Mar. 2015 *Factorization homology as a fully extended topological field theory*, Séminaire Quantique, IRMA, Université de Strasbourg, France
- Jan. 2015 *Factorization homology as a fully extended topological field theory*, Higher Differential Geometry Seminar, MPIM Bonn, Germany
- Nov. 2014 *Factorization homology as a fully extended topological field theory*, Séminaire de Géométrie Algébrique, I3M, Université Montpellier 2, France
- Nov. 2014 *Factorization homology as a fully extended topological field theory*, Séminaire de Topologie, Laboratoire Paul Painlevé, Lille, France
- Nov. 2014 *Higher categories, factorization homology, and fully extended topological field theories*, Réseau d'Étudiants en Géométrie Algébrique, Institut Henri Poincaré, Paris, France
- Nov. 2014 *Factorization homology as a fully extended topological field theory*, Séminaire de Topologie Algébrique, Université Paris 13, France
- Aug. 2014 *Factorization homology as a fully extended topological field theory*, Stanford Topology Seminar, USA
- June 2014 *Factorization homology as a fully extended topological field theory* Séminaire Géométrie Algébrique, Champs et Homotopie, Université Toulouse III, France

UPCOMING EVENTS AND INVITATIONS

- May 2018 Invited talk at workshop on *Infinity-Categories, Infinity-Operads, and their Applications*, BIRS Oaxaca, Mexico

- Jun. 2018 Invited minicourse at Séminaire de mathématiques supérieures (SMS) 2018, Fields Institute, Toronto, Canada
- Jul. 2018 Invited speaker at *Higher structures in homotopy theory*, opening workshop for Newton Institute Program on *Homotopy harnessing higher structures*; extended research visit at same program
- Jan. 2019 Invited speaker at *Higher Structures*, conference at CIRM Luminy
- Jan. 2019 Invited speaker at *Connections for Women: Derived Algebraic Geometry, Birational Geometry and Moduli Spaces*, MSRI; extended research visit at program on *Derived Algebraic Geometry*
- Spring 2020 Invitations for both MSRI programs: on *Quantum Symmetries* and *Higher Categories and Categorification*; Coorganizer of topical workshop for the former program

LECTURE SERIES AND TEACHING EXPERIENCE

- since Fall 2017 Coorganizer of Advanced Topics in Topology class, University of Oxford
included giving a minicourse on *The higher category of cobordisms*
- Fall 2017 Tutor for Course on *Category Theory*, University of Oxford
- Spring 2016 Coorganized minicourse on *The Cobordism Hypothesis* at MPIM Bonn
- Spring 2016 Course on *Derived deformation theory and Koszul duality* at MPIM Bonn (with Owen Gwilliam)
4 hour course for advanced master's and PhD students; lectures on derived deformation theory following Lurie's approach in DAG X: Formal moduli problems and participant talks on related topics
- Sep. 2009–Aug. 2014 Assistant, Department of Mathematics, ETH Zurich
- Seminar on Homotopical and Higher algebra (Fall 2012)
Coorganized seminar for master's and PhD students; included meeting with students as a preparation for their talks on the topic
 - Topology (Spring 2013)
Coordinator of exercise classes; included substituting the lecturer on several occasions, designing the exercise sheets, co-examining the oral exams, weekly exercise sessions (TA) for reviewing the course material and discussing solutions, grading homework
 - Algebraic Geometry (Spring 2012)
Coordinator of exercise classes; included substituting the lecturer on several occasions, designing the exercise sheets, co-examining the oral exams
 - Commutative Algebra (Fall 2011)
Coordinator of exercise classes; included designing the exercise sheets, co-examining the oral exams, weekly exercise sessions (TA) for reviewing the course material and discussing solutions, grading homework
 - Algebra 1 and 2 (Fall 2010, Spring 2011)
Teaching assistant; included weekly exercise sessions (TA) for reviewing the course material and discussing solutions, office hours, co-examining the oral exams, grading homework
 - Mathematical Thinking for Architects (Spring 2010)
several question sessions for course material and homeworks throughout the semester, grading homework
 - Complex Analysis (Fall 2009)
weekly exercise sessions (TA) for reviewing the course material and discussing solutions, office hours, grading homework
- Feb. 2010–Aug. 2011 Group coordinator for assistant group “Arithmetic and Geometry”
Responsible for coordination of approximately 20 assistants
and between 20 to 30 teaching assistants

2006–2009	Teaching assistant at Vienna UT for exercise classes in <ul style="list-style-type: none"> • Mathematics 1, 2, 3 for Mechanical Engineers • Mathematics 1 for Civil Engineers • Mathematics 1 for Computer Scientists <p>included substituting the lecturer on several occasions, weekly exercise sessions for examining students about their homework assignments, office hours, grading midterm and final exams on homework problems</p>
Summer 2006, 2007	Counselor in the “Program in Mathematics for Young Scientists (PROMYS)” at Boston University, MA, U.S.A. Number Theory program for outstanding high school students included acting as main counselor for approx. 4 high school students: reviewing class, grading homework, mentoring; grading homework for additional more advanced classes; supervising research lab projects

SERVICE AND OUTREACH

SERVICE

- Co-organizer of the Topology Seminar at the University of Oxford, since fall 2017
- Doctoral examinations: Confirmation viva examiner in Oxford (twice) and member of the Doctoral Examination Board in Nijmegen (once)
- Referee for several research articles (e.g. for AGT)
- Organizer (with Viktoriya Ozornova) of a 3-day conference for Young researchers in homotopy theory and categorical structures, Max Planck Institute for Mathematics, Bonn in February 2017
- Organizer (with Damien Calaque) of the Derived Algebraic Geometry Winter School in Flumserberg in Nov. 2013, Switzerland: workshop for PhD students and Postdocs, mentored by Bertand Toën and Michel Vaquié
- Co-organizer of the Zurich Graduate Colloquium: Joint Graduate Student Seminar of ETH Zurich and University of Zurich, fall 2012 – fall 2013
- Member of the committee for “Nachdiplomvorlesungen” at ETH Zürich, spring 2013-spring 2014

OUTREACH

- *Oxford Alumni Weekend: Quantum field theory meets Topology* within overview talk by young researchers at Oxford Mathematics
- *Program in Mathematics for Young Scientists (PROMYS)*: Number Theory summer program for outstanding high school students:
 - guest lecturer on *Not a knot* at University of Oxford, Jul. 2017
 - participant in workshop *Developing Exceptional Talent in Mathematics* at University of Oxford, Aug. 2014
 - counselor in 2006 & 2007 at Boston University, MA, U.S.A.

FUNDING, SCHOLARSHIPS, AND AWARDS

- Offer of Titchmarsh Research Fellowship at University of Oxford for 2018-2021, declined
- Teaching Award 2016 of the Faculty of Mathematics and Natural Sciences of the University of Bonn
- Advanced Postdoc.Mobility Fellowship of Swiss National Science Foundation on *Factorization algebras and functorial field theories*, project number P300P2_164652, 18 months, CHF 80250
- Early Postdoc.Mobility Fellowship of Swiss National Science Foundation on *Fully extended topological field theories*, project number P2EZP2_159113, 18 months, CHF 70891
- Grant of Zurich Graduate School for the organization of the Derived Algebraic Geometry Winter School in November 2013, CHF 11000
- Scholarship of Vienna UT for 3 month research visit at ETH Zurich for diploma thesis on “Arakelov Geometry with a View towards Integral Points”, jointly supervised by Prof. Michael Drmota and Prof. Gisbert Wüstholz