

## CONTACT DETAILS

Mathematical Institute  
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## RESEARCH INTERESTS

Algebraic geometry, geometric representation theory, derived/homological aspects.

## EMPLOYMENT

August 2019–	Postdoctoral Research Assistant, Mathematical Institute, University of Oxford
2017–2019	Member, School of Mathematics, Institute for Advanced Study, Princeton, NJ
2015–2017	Postdoctoral Research Fellow, Department of Mathematics, University of British Columbia

## EDUCATION

2015	Ph.D. in Mathematics Northwestern University, Evanston, IL Advisor: David Nadler
2010	Master in Advanced Studies in Mathematics (Part III) University of Cambridge, Churchill College, Cambridge, United Kingdom
2009	MSc in Technical Mathematics with a concentration in Mathematics in Computer Science Vienna University of Technology, Vienna, Austria including a semester at ETH Zürich, Switzerland

## PUBLICATIONS

*The de Rham functor for logarithmic  $D$ -modules.*

Preprint. [arXiv:1904.07918](https://arxiv.org/abs/1904.07918).

*Graded topological spaces.*

Proceedings of the American Mathematical Society 148 (2020), 1325–1338. [doi:10.1090/proc/14867](https://doi.org/10.1090/proc/14867)

*Holonomic and perverse logarithmic  $D$ -modules.* Joint with Mattia Talpo.

Advances in Mathematics 346 (2019), 510–545. [doi:10.1016/j.aim.2019.02.016](https://doi.org/10.1016/j.aim.2019.02.016).

*Exotic sheaves via actions of quantum affine algebras.* Joint with Sabin Cautis.

To appear in the Journal of the European Mathematical Society. [arXiv:1611.02777](https://arxiv.org/abs/1611.02777).

*Hochschild cohomology of torus-equivariant  $D$ -modules.*

To appear in International Mathematics Research Notices. [arXiv:1506.07370](https://arxiv.org/abs/1506.07370).

*Exact functors on perverse coherent sheaves*

Compositio Mathematica 151 (2015), no. 9, 1688–1696. [doi:10.1112/S0010437X15007265](https://doi.org/10.1112/S0010437X15007265).

## INVITED TALKS

- February 2019 | *Logarithmic Riemann–Hilbert Correspondences.*  
Geometry, Algebra, Physics and Topology Seminar, Cardiff University, UK  
*What is a holonomic log  $D$ -modules?*  
Geometry in Cardiff seminar, Cardiff University, United Kingdom
- January 2019 | *Logarithmic Riemann–Hilbert Correspondences.*  
Universität Bielefeld, Germany
- December 2019 | *Log  $D$ -modules and graded topological spaces.*  
COW Seminar, University of Birmingham, United Kingdom  
*Logarithmic Riemann–Hilbert Correspondences.*  
University of Georgia, Athens, GA, USA
- November 2019 | *D-modules in logarithmic geometry.*  
Algebra Seminar, University of Leeds, United Kingdom
- October 2019 | *D-modules in logarithmic geometry.*  
Algebraic Geometry Seminar, University of Oxford, United Kingdom
- April 2019 | *T-structures from categorical representations.*  
Symplectic Representation Theory, CIRM, Marseille, France
- March 2019 | *Logarithmic  $D$ -modules and the de Rham functor.*  
Imperial College London, United Kingdom
- January 2019 | *Logarithmic Riemann–Hilbert Correspondences.*  
University of Glasgow, United Kingdom
- November 2017 | *Exotic  $t$ -structures via quantum affine algebras.*  
M-seminar, Kansas State University, USA
- October 2016 | *T-structures on coherent sheaves and categorical actions.*  
Algebraic Geometry Seminar, University of British Columbia, Canada
- September 2015 | *Hochschild cohomology of torus-equivariant  $D$ -modules.*  
Algebraic Geometry Seminar, University of British Columbia, Canada
- April 2015 | *A “microlocal” characterization of perverse coherent sheaves.*  
Midwest Algebraic Geometry Graduate Conference, UIC, USA  
*A “microlocal” characterization of perverse coherent sheaves.*  
Geometry/Physics Seminar, Northwestern University, USA

## OTHER RESEARCH PRESENTATIONS

- September 2018 | *Logarithmic Riemann–Hilbert Correspondences.*  
Short talks by postdoctoral members, Institute for Advanced Study, Princeton, NJ
- November 2017 | Poster and short talk *Exotic sheaves via actions of quantum affine algebras.*  
Winter School: Categorification, representation theory and symplectic geometry, HIM, Bonn, Germany
- September 2017 | *Categorical actions in geometry and representation theory.*  
Short talks by postdoctoral members, Institute for Advanced Study, Princeton, NJ
- August 2017 | Poster *Exotic sheaves via actions of quantum affine algebras.*  
Interactions between Representation Theory and Algebraic Geometry, Chicago, IL

## TEACHING

## UNIVERSITY OF OXFORD

- Fall 2019 | Derived categories of coherent sheaves  
Graduate course broadcast to a network of universities

## UNIVERSITY OF BRITISH COLUMBIA

2016/17, Term 2	MATH 317 Calculus IV 80 students
Summer 2016	MATH 100 Differential Calculus with Applications to Physical Sciences and Engineering 80 students; single section course; responsible for all aspects of the course
2015/16, Term 2	MATH 532 Algebraic Geometry I 10 students; graduate course
2015/16, Term 1	MATH 100 Differential Calculus with Applications to Physical Sciences and Engineering 120 students; section in a large coordinated multi-section course

## NORTHWESTERN UNIVERSITY

Teaching assistant. Responsibilities included discussion sections and grading for the following classes (each section with 20–40 students):

Spring 2015	MATH-224-0 Integral Calculus of One Variable Functions (2 sections)
Fall 2013	MATH-220-0 Differential Calculus of One-Variable Functions (3 sections)
Spring 2013	MATH-281-3 Accelerated Mathematics for ISP: First Year
Spring 2013	MATH-340-0 Geometry
Fall 2012	MATH-230-0 Differential Calculus of Multivariable Functions (3 sections)
Spring 2012	MATH-331-3 MENU: Abstract Algebra
Spring 2012	MATH-308-0 Graph Theory
Winter 2012	MATH-334-0 Linear Algebra: Second Course
Winter 2012	MATH-306-0 Combinatorics & Discrete Mathematics
Fall 2011	MATH-220-0 Differential Calculus of One-Variable Functions (2 sections)

## VIENNA UNIVERSITY OF TECHNOLOGY

Exercise and repetition classes in Mathematics for Engineers and Mathematics for Computer Scientists during the years 2006 to 2009.

## SERVICE AND OUTREACH

Review for *Selecta Mathematica*, *Math Reviews*

Organizer of the UBC Algebraic Geometry seminar

Co-initiator and longtime co-maintainer of the community website for the Austrian Mathematical Olympiad

Member of the Austrian Mathematical Society (ÖMG)

## AWARDS AND GRANTS

2017	UBC postdoctoral travel grant
2010	Fulbright fellowship (declined)
2010	Churchill College excellence award
2005–2009	Excellence scholarships of the Vienna University of Technology

## PERSONAL

Languages	German: native; English: fluent; French: basic
Citizenship	Austria