

Matt Booth

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Personal

Born 27 August 1993, Bath, United Kingdom. British Citizen.

Positions

2020- **University of Antwerp**
Postdoctoral research assistant, working under Dr. Wendy Lowen.

Education

2015-2019 **University of Edinburgh**
PhD in Mathematics, defended August 2019.
Supervisor: Dr. Jon Pridham.
Thesis: *The derived contraction algebra*.

2011-2015 **University of Oxford (Merton College)**
MMath in Mathematics. First-class honours.

Research Interests

I am interested broadly in homotopical and noncommutative approaches to algebraic geometry. I am particularly interested in

- Deformation theory: Koszul duality, prorepresentability, (topological) Hochschild cohomology, many-object versions of the above
- Derived noncommutative geometry: stable ∞ -categories (in the guise of dg or spectral categories), noncommutative resolutions, representation-theoretic aspects, the homological minimal model program

and the intersection of the two.

Preprints

- 2020 *The derived deformation theory of a point*. ArXiv:2009.01590
Submitted to *Math. Z.*
- 2020 *Singularity categories via the derived quotient*. ArXiv:2003.054396
Submitted to *Adv. Math.*
- 2019 *The derived contraction algebra*. ArXiv:1903.12156
- 2018 *Noncommutative deformation theory, the derived quotient, and DG singularity categories*. ArXiv:1810.10060

Selected talks given

Derived, Birational, and Categorical Algebraic Geometry, Banff (online), November 2020
Higher homotopy algebras in topology 2, Dublin, March 2020
Workshop on Derived Categories, Moduli Spaces and Deformation Theory, Cetraro, May 2019
Algebra seminar, Glasgow, February 2019
CALF, Warwick, January 2019
Postgraduate seminar, Lancaster, January 2019
Junior algebraic geometry seminar, Warwick, November 2018
GAEL XXVI, Strasbourg, June 2018
Noncommutative Hodge theory seminar, Edinburgh, January 2018
Derived categories working group, Edinburgh, May 2017
Reading Course on Deformation Theory, Edinburgh, February & March 2017
GEARS, Glasgow, February 2017
Hodge Day, Edinburgh, June 2016

Selected Conferences Attended

The Geometry of Derived Categories, Liverpool, September 2019
Homotopy meets homology, Dublin, May 2019
Young Perspectives in Deformation Theory, Turin, November 2018
Homotopy algebras, deformation theory and quantization, Będlewo, September 2018
British Algebraic Geometry 3, Cambridge, September 2017
Hausdorff School: Derived Noncommutative Geometry, Bonn, May 2017
Geometry and Physics XIV, Sheffield, August 2016
Motives and derived algebraic geometry, Essen, May 2016
Derived Geometry, Oberwolfach, December 2015

Teaching

Courses tutored at the University of Edinburgh:
Honours Algebra, Fundamentals of Pure Mathematics, Honours Analysis,
Geometry, Calculus and its Applications, Engineering Mathematics 1b

Other

Co-organiser of the junior Algebra and Geometry seminar, Edinburgh, 2016-2018
Organiser of the Postgraduate Colloquium, Edinburgh, 2016-2017