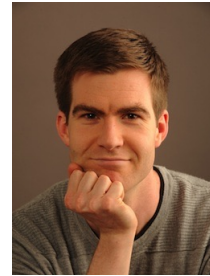


Will Donovan

E-mail: donovan@mail.tsinghua.edu.cn
Skype: dr.will.donovan@gmail.com
Homepage: member.ipmu.jp/will.donovan
Birthdate: 6th June 1982
Nationality: UK



Academic positions

2021– Yau MSC, Tsinghua University: Associate Professor
2018–21 Yau MSC, Tsinghua University: Assistant Professor
2014–18 Kavli IPMU, University of Tokyo: Postdoctoral Fellow
2011–14 University of Edinburgh: Research Assistant

Further affiliation

2021– Yanqi Lake BIMSA: Adjunct Associate Professor
2020– Kavli IPMU, University of Tokyo: Visiting Associate Scientist

Education

2007–11 PhD Mathematics, Imperial College London
2003–4 MMath Mathematics, University of Cambridge (Part III)
2000–3 BA Mathematics, University of Cambridge

Publications

1. Grassmannian twists on the derived category via spherical functors
Proc. London Math. Soc. (2013) 107 (5): 1053–1090.
2. Window shifts, flop equivalences and Grassmannian twists (with E. Segal)
Compositio Math. (2014) 150 (6): 942–978.
3. Mixed braid group actions from deformations of surface singularities (with E. Segal)
Comm. Math. Phys. (2015) 335 (1): 497–543.
4. The Pfaffian-Grassmannian equivalence revisited (with N. Addington and E. Segal)
Alg. Geom., *Foundation Compositio Math.* (2015) 2 (3): 332–364.
5. Noncommutative deformations and flops (with M. Wemyss)
Duke Math. Jour. (2016) 165 (8): 1397–1474.
6. Moduli spaces of torsion sheaves on K3 surfaces (with N. Addington and C. Meachan)
J. London Math. Soc. (2016) 93 (3): 846–865.
7. Mukai flops and \mathbb{P} -twists (with N. Addington and C. Meachan)
J. Reine Angew. Math. (Crelle) (2019) 748: 227–240.
8. Contractions and deformations (with M. Wemyss)
Amer. J. Math. (2019) 141 (3): 563–592.
9. Twists and braids for general 3-fold flops (with M. Wemyss)
J. Eur. Math. Soc. (2019) 21 (6): 1641–1701.

10. Perverse schobers and wall crossing
Int. Math. Res. Notices (2019) 18: 5777–5810.
11. Noncommutative enhancements of contractions (with M. Wemyss)
Adv. Math. (2019) 344: 99–136.
12. Mirror symmetry for perverse schobers from birational geometry (with T. Kuwagaki)
Comm. Math. Phys. (2021) 381: 453–490.
13. Stringy Kähler moduli for the Pfaffian-Grassmannian correspondence
SIGMA (2021) 17, 028.
14. Stringy Kähler moduli, mutation and monodromy (with M. Wemyss)
Preprint, submitted, arXiv:1907.10891.

Proceedings (peer-reviewed)

15. Contractions of 3-folds: deformations and invariants
Internat. J. Math. (2016) 27 (7), special issue VBAC 2014.
16. Perverse schobers on Riemann surfaces: constructions and examples
Eur. J. Math. (2019) 5: 771-797.
17. Relating derived equivalences for simplices of higher-dimensional flops
Preprint, submitted, arXiv:2108.10541.

Proceedings

18. Grassmannian twists, derived equivalences and brane transport
Proc. Symp. Pure Math. (2015), Proc. String-Math 2012.
19. Applications of noncommutative deformations
Proc. Kinoshita Alg. Geom. Symp. (2016), available online.

Grants (competitive research)

- 2019–22 China central government **Thousand Talents** Plan
Value: 2.5 million yuan (~\$350k)
- 2016–18 Japan Soc. for Promotion of Science KAKENHI **Young Scientist B**
Value: 2.9 million yen (~\$25k)

Awards

- 2020 Yau MSC Ruolin 若琳 Research Excellence Award
- 2019 Yau MSC Outstanding Paper Award ‘Twists and braids for general 3-fold flops’

Visits

- Aug–Sep 2020 University of Glasgow, UK
- Jun–Jul 2020 Korean Institute of Advanced Study, Seoul
- Feb–Jun 2020 Kavli IPMU, University of Tokyo
- Jul–Aug 2014 Korean Institute of Advanced Study, Seoul
- Jan–Apr 2014 Hausdorff Institute, Bonn (Junior Trimester)
- Apr–Jul 2013 Schrödinger Institute, Vienna
- May 2012 Steklov Institute, Moscow (LMS Young Mathematicians Scheme)

Postgraduate students

- 2019– **X. Lin:** motivic methods, derived categories, birational geometry
2019– **W. Su:** homotopical algebra, geometric representation theory
2020– **L. Zheng:** D-modules, perverse sheaves, categorification

Teaching

Yau MSC, Tsinghua University

- 2021 **Lecturer:** ‘Derived functors in algebraic and birational geometry’
36-hour graduate course.
- 2020 **Lecturer:** ‘Calculus 1 for international students’
52-hour undergraduate course.
180+ students.
- 2020 **Lecturer:** ‘Mirror symmetry: categories and constructions’
36-hour advanced graduate course.
- 2020 **Project supervisor:** M. Zhao, ‘Tilting objects for parabolic Grothendieck resolutions’
Visiting Year 3 student from Sydney University.
- 2019 **Lecturer:** ‘Geometric representation theory 2’
48-hour advanced graduate course, joint with P. Shan.
- 2019 **Lecturer:** ‘Calculus 2 in English’
52-hour undergraduate course.
- 2018 **Lecturer:** ‘Derived functors in algebraic and birational geometry’
36-hour graduate course.

Edinburgh University

- 2011–12 **Lecturer:** ‘Mathematical Communication and Computation’
Teaching award nomination, University Students’ Association.

Service

Yau MSC, Tsinghua

- Geometric representation theory seminar organizer (2021–)
Colloquium committee member (2019–21)

Conference organization

- Workshop ‘Categorified wall crossing’ at U California, Davis, mentor (2021)
Workshop ‘Derived categories’ at Hausdorff Institute, Bonn, organizer (2014)

Seminar organization

- Kavli IPMU, GTM seminar organizer (2016–18)
Edinburgh U, MAXIMALS algebra seminar, organizer (2013)
TCC/CALF geometry day at Imperial College London, organizer (2009)
CALF algebraic geometry seminar, London representative (2008–10)

Selected talks

2020

CNU, Beijing
IASM, Hangzhou
Kavli IPMU, Tokyo
KAIST, Korea
KIAS, Seoul
Steklov Inst, Moscow
Warwick U

2019

Auckland U, New Zealand
Australian Nat. U, Canberra
BIRS Oaxaca, Mexico
CTU, Prague
Fudan U
Kyoto U
Liverpool U
Osaka U
Sydney U
SYSU, Guangzhou

2018

Hokkaido U
Nayoga U
TSIMF Sanya, Hainan
Yau MSC Tsinghua, Beijing

2017

Australian Nat. U, Canberra
Bath U
ICMS, Edinburgh U

2017 (continued)

Nayoga U
Osaka U
SISSA, Trieste

2016

BIRS Banff
ECM, Berlin
Freie Universität, Berlin
Hanga Roa, Chile

Hong Kong U
Kinosaki Symposium
Kyoto U
METU, Ankara
Nayoga U
Tokyo U

2015

Fields Institute, Toronto
Kent U
Max Planck Institute, Bonn
Oberwolfach
Warwick U

2014

Freie Universität, Berlin
BICMR, Beijing
Hamburg U
Kavli IPMU, Tokyo
KIAS, Seoul
Sheffield U

2013

Cardiff U
Columbia U
Duke U
Edinburgh U
Imperial College London
Leeds U
Oxford U
Schrödinger Inst., Vienna

2012

ETH Zürich
Glasgow U
Hausdorff Institute, Bonn
Newcastle U
Steklov Inst, Moscow
Queen Mary, U London
Warwick U

2011

Edinburgh U
Warwick U

2008

CSIC, Madrid

Outreach

- Workshop series, for University of Tokyo ‘Soap bubbles and spacetime’ (2017–)
At 6 locations, including Tamarokuto Science Centre and Kavli IPMU
- Interviewed, for University of Tokyo ‘Discover Our People’ (2016)
- Talk: ‘The frontiers of symmetry: hidden geometry and tangled superstrings’
King’s College London Math School (2015)
- Summerhall, Edinburgh, for International Year of Crystallography (2014)

Languages

- English (native)
- Japanese, Mandarin (intermediate)
- French, German (elementary)