Felix **Küng**

Research Fellow · Algebraic Geometry

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"I like the rain, it makes flowers grow and I don't mind getting wet."

Education

Phd — *University of Liverpool*

01.10.2018-04.07.2022 — *United Kingdom*

Thesis: *Twisted Hodge Diamonds give rise to new Non-Fourier-Mukai functors*

Advisor: Dr. Alice Rizzardo, Second Advisor Dr. John Woolf

Msc — *University of Bonn*

01.4.2015-02.11.2017 — *Germany*

Master Thesis: *Structures on the category of N-complexes*
Advisor Dr. Olaf Schnürer, Second Advisor Prof. Catharina Stroppel

Grade: very good

Bsc — *University of Munich*

01.10.2011-01.10.2014 — *Germany*

Bachelor Thesis: *Algebraisches K_0 und der Satz von Swan*
Advisor: Prof. Andreas Rosenschon

Grade: very good

Matura — *BG/BRG Freistadt*

2002-17.06.2010 — *Austria*

Employment

Research Fellow — *Université libre de Bruxelles*

since April 2022 — *Belgium*

Teaching assistant — *University of Liverpool*

2018-2022 — *United Kingdom*

Tutor for Linear Algebra I and II — *University of Bonn*

2016-2018 — *Germany*

Tutor for Computer-Architecture and Operating Systems — *University of Munich*

2013-2015 — *Germany*

Organisation Member for International Conferences in Computer Science — *DEXA Society*

2009-2016 — *Austria*

Paid staff at DEXA 2009 in Linz (Austria), DEXA 2010 in Bilbao (Spain), DEXA 2011 in Toulouse (France), DEXA 2012 in Vienna (Austria), Dexa 2013 in Prague (Czech Republic), Dexa 2014 in Munich (Germany), Dexa 2015 in Valencia (Spain) and Dexa 2016 in Porto (Portugal)

Teaching

Seminar on Homological Mirror-Symmertry — *Université libre de Bruxelles*

since January 2025 — *Belgium*

Collaborative reading seminar in differential and algebraic geometry

Supervision Master-student: Benjamin Noez — *Université libre de Bruxelles*

SINCE SEPTEMBER 2024 — *Belgium*

Supervision of Mini-Master project

Algebraic Geometry — *Université libré de Bruxelles*

WINTERSEMESTER 2024/2025 — *Belgium*

Exercise Sessions

Algebraic Geometry — *Université libré de Bruxelles*

WINTERSEMESTER 2023/2024 — *Belgium*

Replacement Lecturer

Teaching assistant — *University of Liverpool*

2018-2022 — *United Kingdom*

Differential Geometry, Wintersemester 2020/2021 and Wintersemester 2019/2020; **Metric Spaces** Wintersemester 2020/2021 and Wintersemester 2019/2020; **Geometry of Curves** Wintersemester 2020/2021 and Wintersemester 2019/2020; **Linear Statistical Models** Summersemester 2020; **Networks in Theory and Practice** Summersemester 2020; **Chaos Theory** Summersemester 2020; **Mathematical Models: Microeconomics & Population Dynamics** Summersemester 2019; **Probabilistic Models** Summersemester 2019; **Financial Mathematics III** Wintersemester 2018/2019.

Tutor for Linear Algebra I and II — *University of Bonn*

2016-2018 — *Germany*

Tutor for Computer-Architecture and Operating Systems — *University of Munich*

2013-2015 — *Germany*

Conferences and Research Visits

Invited-Talk — *University of Liverpool*

13.02.2025 — *United Kingdom*

Talk: *Objects detecting non-Fourier-Mukai functors*

MALGA-Talk — *University of Verona*

22.01.2025 — *Italy*

Talk: *detecting non-Fourier-Mukai functors*

Semester Program on Noncommutative Algebraic Geometry — *SL-Math*

16.01.2024-24.05.2024 — *USA*

Talk in introductory workshop: *detecting non-Fourier-Mukai functors*

AMS Special Session on Commutative and Non-commutative Algebra — *San Francisco*

04.05.2024-05.05.2024 — *USA*

Talk: *Twisted Hodge diamonds are Hochschild cohomology*

University of Graz — *Graz*

08.01.2024-09.01.2024 — *Austria*

Talk: *what makes functors geometric and how can we construct non-geometric ones*

Brussels Summer School of Mathematics — *Brussels*

28.08.2023-1.09.2023 — *Belgium*

Talk: *Homology and Homotopy*

Higher algebraic Structures in Representation Theory and Geometry — *Nordfjordeid*

14.08.2023-18.08.2023 — *Norway*

Talk: *Twisted Hodge diamonds give rise to non-Fourier-Mukai functors*

Algebraic structures in Enumerative Geometry — *Isle of Skye*

17.04.2023-22.04.2023 — *United Kingdom*

Talk: *Quantization of Vertex algebras*

Research Visit — *Liverpool*

13.03.2023-17.03.2023 — *United Kingdom*

Talk: *Twisted Hodge diamonds give rise to non-Fourier-Mukai functors*

The Fourth W. Killing and K. Weierstrass Colloquium *Gdansk*

18.07.2022-22.07.2022 *Poland*

Talk: *Twisted Hodge diamonds give rise to non-Fourier-Mukai functors*

Invariants in Algebraic Geometry *Dijon*

16.05.2022-20.05.2021 *France*

Talk: *Twisted Hodge diamonds give rise to non-Fourier-Mukai functors*

Calf Meeting *Cambridge*

08.12.2021 *United Kingdom*

Talk: *Twisted Hodge diamonds give rise to non-Fourier-Mukai functors*

Research Visit *Oslo*

01.11.2021-10.11.2021 *Norway*

Talks:
$\mathcal{A}_\infty$*-structures and their obstructions*
Twisted Hodge-diamonds give rise to non-Fourier-Mukai functors

GAEL XXVIII *Loughborough*

05.07.2021-09.07.2021 *United Kingdom*

Talk: *Twisted Hodge diamonds give rise to non-Fourier-Mukai functors*

The Geometry of Derived Categories *Liverpool*

09.09.2019-13.09.2019 *United Kingdom*

Poster

Derived Categories, Moduli Spaces and Deformation Theory *Cetraro*

24.07.2019-28.07.2019 *Italy*

Poster

Winterschool on *Categorification, representation theory and symplectic geometry* *Bonn*

20.11.2017-24.11.2017 *Germany*

Poster

Acquired Funding

Various Mobility grants *FNRS*

2024-2025 *Belgium*

$\sim$ €1000 for various research visits

Mobility Grant *FNRS*

2024 *Belgium*

€2500 for research visit to SL-Math insitute

Mobility Grant *Université libre de Bruxelles*

2024 *Belgium*

€4000 for research visit to SL-Math institute

Publication List

Comparison of Cohomological and K-theoretical Hall algebra *11. Juli 2025*

Arxiv Preprint: arXiv:2507.08417

Injectives obstruct Fourier-Mukai functors *6. August 2024*

Arxiv Preprint: arXiv:2408.03027

Algebraic K_0 for unpointed homotopy Categories *30. July 2024*

Arxiv Preprint: arXiv:2407.20911

Algebraic K_0 for unpointed Categories *25. May 2024*

Published at Journal for Algebra and its Applications

free access version: arXiv:2401.18078

Structures on the category of N-complexes *23. May 2023*

Recommended for publication by Referee at Journal of Homotopy and related Structures

free access version: arxiv:2305.14054

Twisted Hodge Diamonds give rise to Non-Fourier-Mukai functors *8. November 2023*

Published at the Journal of Non-commutative Geometry

free access version: arXiv:2207.03363

Services

Workshop *Tale of Geometries* *Université libre de Bruxelles*

28.10.2024-30.10.2024 *Belgium*

Organized Workshop on algebraic geometry

Workshop *Derived Categories in algebraic Geometry* *University of Liverpool*

28.10.2024-30.10.2024 *United Kingdom*

Organized Workshop on algebraic geometry

President of the SIAM student chapter Liverpool *University of Liverpool*

2019-2021 *United Kingdom*

Member of the PGR Student Staff Relation Committee *University of Liverpool*

2018-2019 *United Kingdom*

Poll watcher *Various Elections*

2011-2015 *Austria*

Civil service in nursing *Seniorenzentren Linz*

2010-2011 *Austria*

Skills

Programming LaTeX, C/C++, JAVA, Python, R, SQL

Programs Sage, Office (i.e: Access, Excel, Word, Powerpoint...)

Languages German (Mothertongue), English C2, Spanish B2, French B2, Akkadian

Attended Conferences, Workshops and Summer Schools

Conference *Mathematics on the Crossroad of Centuries* — *IHES*
16.09.2024-20.05.2024 — *France*

Workshop *DT Theory and derived Categories* — *Sorbonne Paris*
12.09.2024-13.05.2024 — *France*

Workshop *Derived Categories and Moduli Spaces* — *Santa Barbara*
01.05.2024-04.05.2024 — *USA*

Workshop *Hochschild (Co)Homology and Applications* — *Oberwohlfach*
14.04.2024-19.04.2024 — *Germany*

Workshop *Recent Developments in Commutative Algebra* — *SL-Math*
14.04.2024-19.04.2024 — *USA*

Workshop *Recent Developments in Noncommutative Algebraic Geometry* — *SL-Math*
08.04.2024-12.04.2024 — *USA*

Connections Workshop: Noncommutative Algebraic Geometry — *SL-Math*
01.02.2024-02.02.2024 — *USA*

Introductory Workshop: Commutative Algebra — *SL-Math*
22.01.2024-26.01.2024 — *USA*

Connections Workshop: Commutative Algebra — *SL-Math*
18.01.2024-19.01.2024 — *USA*

Conference *Categories and stacks in algebraic geometry and algebraic topology CATS 7* — *CIRM*
16.10.2023-21.10.2023 — *France*

Conference *Hopf Days in Brussels* — *Brussels*
04.09.2023-06.09.2023 — *Belgium*

Workshop on *Motives in Moduli and Representation Theory* — *Nijmegen*
10.07.2023-14.07.2023 — *Netherlands*

Conference on *Derived Categories, Moduli Spaces, and Counting Invariants* — *London*
03.07.2023-07.07.2023 — *United Kingdom*

Workshop on *Spectra, Triangles, and higher Structures* — *Bonn*
05.12.2022-09.12.2022 — *Germany*

Conference on *Representation Theory and Triangulated Categories* — *Paderborn*
26.09.2022-01.10.2022 — *Germany*

Conference on *Noncommutative Shapes* — *Antwerp*
12.09.2022-16.09.2022 — *Belgium*

Conference on *Six Functors Formalism and Motivic Homotopy Theory* — *Milan*
20.09.2021-25.09.2021 — *Italy*

Summerschool on *Derived and Triangulated Categories* — *Berlin*
13.08.2020-27.08.2020 — *Germany*

Summer Camp on Bridgeland Stability Conditions — *Berlin*
02.08.2021-06.08.2020 — *Germany*

Summer Camp on *Derived Categories, Stability Conditions and Deformations* — *Berlin*
17.08.2020-21.08.2020 — *Germany*

Symposium on *Ocean Cleanup* — *Liverpool*
16.12.2019-19.12.2019 — *United Kingdom*

GLEN meeting *Singularities and Derived Categories* — *Sheffield*
13.11.2019-14.11.2019 — *United Kingdom*

GLEN meeting *Homological Mirror Symmetry* — *Manchester*
28.02.2019-01.02.2019 — *United Kingdom*

Workshop on *Enhancing Representation Theory, Noncommutative Algebra and Geometry* — *Edinburgh*
31.01.2019-01.02.2019 — *United Kingdom*

Conference: Finite dimensional Algebras, Homotopy Theory, and Geometry — *Glasgow*
13.12.2018-14.12.2018 — *United Kingdom*

Summerschool on *Geometric Representation Theory* — *IST*
09.06.2018-13.06.2018 — *Austria*

Workshop on A_∞-*Structures in Geometry and Representation Theory* — *Bonn*
04.12.2017-08.12.2017 — *Germany*

Workshop on *Categorification, Representation Theory and Symplectic Geometry* — *Bonn*
27.11.2017-01.12.2017 — *Germany*

Conference on *Triangulated Categories and Geometry* — *Bielefeld*
15.05.2017-15.05.2017 — *Germany*

Conference *Young Women in Representation Theory* — *Bonn*
23.06.2016-25.06.2016 — *Germany*

Workshop on *Categorification* — *Bonn*
16.05.2016-20.05.2016 — *Germany*

Conference *Panorama of Mathematics* — *Bonn*
21.10.2015-23.10.2015 — *Germany*

Introductory school on *Moduli Spaces* — *Bonn*
28.09.2015-08.10.2015 — *Germany*