

Shane Kelly

CONTACT INFORMATION	Freie Universität Berlin FB Mathematik und Informatik Arnimallee 3 14195 Berlin, Germany	+4917 5504 5829 shane.kelly.uni-at-gmail-dot-com http://www.mi.fu-berlin.de/users/shanekelly/
RESEARCH INTERESTS	Arithmetic algebraic geometry (specifically motivic cohomology; motivic homotopy theory, K-theory, algebraic cycles); Birational geometry, singularities (via differential forms in positive characteristic); Modular representation theory (via stratified mixed Tate motives) Tensor triangulated geometry (in motivic homotopy theory)	
EMPLOYMENT	2016–2019 Wissenschaftlicher Mitarbeiter FU Berlin, in Hélène Esnault’s research group 2015–2016 Akademischer Mitarbeiter Universität Freiburg, in Annette Huber’s research group 2013–2015 JSPS Postdoctoral Fellowship Tokyo Institute of Technology; Host researcher: Shuji Saito 2012–2013 Wissenschaftlicher Mitarbeiter Universität Duisburg–Essen, in Marc Levine’s research group	
EDUCATION	Australian National University, Université de Paris-Nord 13 Ph.D. (Mathematics) Title: Triangulated categories of motives in positive characteristic Advisors: Denis-Charles Cisinski, Amnon Neeman arXiv:1305.5349 Université de Paris-Sud 11 M2 (Mathematics) Title: Homology of schemes Advisor: Bruno Kahn Università degli studi di Padova Laurea Specialistica con 110 e lode (Mathematics) Title: Fourier-Mukai Transforms in Algebraic Geometry Advisor: Luca Barbieri-Viale University of Western Australia Bachelor of Computer and Mathematical Sciences with First Class Honours Title: Tight Sets and m -ovoids in Polar Spaces Advisors: Michael Giudici, Tim Penttala	

PUBLICATIONS

S.Kelly, “Voevodsky motives and ldh descent”
Astérisque 391. (2017)

A.Huber, S.Kelly, “Differential forms in positive characteristic II: cdh -descent via functorial Riemann-Zariski spaces”
arXiv:1706.05244.

J.N.Eberhardt, S.Kelly, “Mixed Motives and Representations of Algebraic Groups in Equal Characteristic”
(Submitted, 2016) *arXiv:1609.05956*.

A.Huber, S.Kebekus, S.Kelly, “Differential forms in positive characteristic avoiding resolution of singularities”
Bull.Soc.Math.Fr. (Accepted) *arXiv:1407.5786*.

M.Hoyois, S.Kelly, P.-A.Østvær, “The motivic Steenrod algebra over perfect fields”
J.Eur.Math.Soc., (Accepted) *arXiv :1305.5690*.

S.Kelly, “Un isomorphisme de Suslin”
Bull.Soc.Math.Fr. (Accepted) *arXiv:1407.5772*.

S.Kelly, “Some observations about motivic tensor triangulated geometry over a finite field”
Surveys around Ohkawa’s theorem on Bousfield classes (Accepted)*arXiv:1608.02913*.

S.Kelly, S.Saito, “Weight homology of motives”
Int.Math.Res.Not. (13):3938-3984. (2017) *arXiv:1411.5831*.

O.Gabber, S.Kelly, “Points in algebraic geometry”
J.Pure Appl.Algebr., Volume 219, Issue 10, pp 4667–4680 (2015) *arXiv: 1407.5782*.

S.Kelly, “Vanishing of Negative K -theory in positive characteristic”
Compositio Mathematica, 150, pp 1425-1434 (2014) *arXiv:1112.5206*

Undergraduate:

M.Giudici, S.Kelly, “Characterizing a family of elusive groups”
Journal of Group Theory, 12(1) (2009)

S.Kelly, “Constructions of intriguing sets of polar spaces from field reduction and derivation”
Designs, Codes and Cryptography, 43(1). (2007)

J.Bamberg, M.Law, T.Penttila, S.Kelly, “Tight Sets and m -Ovoids of Polar Spaces”
J. Combin. Theory Ser. A, 114(7). (2007)

RECENT INVITED TALKS

June 2017 “Towards the TT -spectrum of the motivic stable homotopy category” **HIM Bonn**, Workshop: K -theory and related fields.

Apr 2017 “Descente par éclatements en motifs, et formes différentielles” **Université de Bordeaux**, Séminaire de Théorie des Nombres.

Feb 2017 “A motivic formalism in representation theory” **Tokyo University**, International Workshop on motives in Tokyo.

Jan 2017 “Tensor triangulated geometry of motives” **Universität München**, Oberseminar Arithmetische und Algebraische Geometrie.

Jan 2017 “Voevodsky motives, l dh descent, and differential forms” **FU Berlin**, Guest seminar Arithmetic Geometry.

Dec 2016 “Un formalisme motivique dans la théorie des représentations” **l’Institut Henri Poincaré**, Conférence de clôture du projet ANR Gatho.

Dec 2016 “Some observations about motivic tensor triangulated geometry over a finite field” **Universitat de Barcelona**, Algebra and Geometry Meeting.

Nov 2016 “A motivic formalism in representation theory” **Università degli studi di Milano**, Workshop Around Motives.

May 2016 “cdh differential forms in positive characteristic” **Johannes Gutenberg-Universität Mainz**, SFB/TRR45 Kolloquium.

April 2016 “Motivic homology theories” **Universität Duisburg–Essen**, Algebra, Geometry and Number Theory Seminar.

Mar 2016 “Motivic cohomology vs étale cohomology” **Freie Universität Berlin**, A day of seminar talks on motivic homotopy theory in Berlin.

Mar 2016 “Théories d’homologie motiviques” **Université de Rennes 1**, Séminaire de géométrie arithmétique.

Feb 2016 “Motivic homology theories” **Tokyo University**, International Workshop on Motives.

Nov 2015 “cdh differential forms in positive characteristic” **Université de Strasbourg**, BFNS Joint Seminar in Algebraic and Complex Geometry.

Sep 2015 “代数幾何における点”, **Chuo University**, Algebra Seminar.

Aug 2015 “A brief introduction to Morel-Voevodsky’s stable homotopy theory” (three talks) **Nagoya University**, Bousfield classes form a set: a workshop in memory of Tetsusuke Ohkawa.

Feb 2015 “An introduction to the Milnor conjecture”, **Tohoku University**, Algebra seminar.

Feb 2015 “Differential forms in positive characteristic avoiding resolution of singularities”, **Osaka University**, Algebraic geometry and complex geometry seminar.

Dec 2014 “Differential forms in positive characteristic avoiding resolution of singularities”, **Tokyo University**, International Workshop on Motives.

Aug 2014 “Vanishing of the prime-to- p part of negative K -theory for noetherian quasi-excellent schemes”, **Chinese Academy of Sciences**, International Conference on K -theory and related topics.

Feb 2014 “Ayoub’s proper base change theorem”, **Nagoya University**, Arithmetic geometry seminar.

HONORS AND AWARDS	2006 H.C. Levey Memorial Prize
	2004 Applied Probability Trust Richard Tweedie Memorial Prize
	2003 Abraham Wald Prize
TEACHING	Winter Semester 2016/2017: Linear codes
	Winter Semester 2016/2017: Étale cohomology
	Summer Semester 2017: Infinity categories
	Summer Semester 2017: Topological data analysis
	Winter Semester 2017/2018: Number theory I
	Winter Semester 2017/2018: Mathematics of data science
STUDENTS	2017 Tommaso Salvatori, Masters
CONFERENCE ORGANISATION	2016 “Differential forms in algebraic geometry”, Universität Freiburg, co-organised with M.Blickle, A.Huber, and S.Kebekus
GRANTS	2015-2018 DFG Grant no HU 512/11-1, part of the SPP 1786/1 Homotopy Theory and Algebraic Geometry (special priority program). Total of €213,700 over 3 years, awarded to Annette Huber. Of which €204,700 for a position specifically for me, the remainder for travel expenses and guests.
	2013-2015 Grant-in-aid. With Shuji Saito. 2,000,000 JPY (\approx €17,000) over two years.
	2009-2012 ANU Vice-Chancellor’s Scholarship. Includes \$30,000 over 3 years research support on top of the scholarship,
REFEREE WORK	Math. Res. Lett., Compos. Math., Duke Math. J., Homology, Homotopy Appl., J. Reine Angew. Math., Selecta Mathematica, Algebra & Number Theory
LANGUAGES	English native French fluent Italian fluent Japanese sufficient for mathematical talks, cf. Invited talks Sep 2015
OTHER	Western Australian Conservatorium of Music Bachelor of Music (2001)