

FANGZHOU JIN

✉ fangzhoujin at tongji.edu.cn
School of Mathematical Sciences
Tongji University
Siping Road 1239
200092 Shanghai, China

Employment

- 2020.12 - **Assistant professor**, *Tongji University*, Shanghai, China
present Supported by NSFC Grant Nr.12101455 (2022-2024).
- 2018.01 - **Postdoctoral fellow**, *Universität Duisburg-Essen*, Essen, Germany
2020.11 In the working group of Prof. Marc Levine.
Supported by DFG Priority Programme SPP 1786 Project “Motivic filtrations over Dedekind domains” and the ERC Project-QUADAG.
- 2016.10 - **Postdoctoral fellow**, *Universität Regensburg*, Regensburg, Germany
2017.12 In the working group of Prof. Denis-Charles Cisinski.
Supported by SFB 1085 Higher Invariants, funded by the DFG.

Visiting positions

- 2021.07 **Peking University**, Beijing
2019.04 **Universität Zürich**, Zürich
2019.02 **Tongji University**, Shanghai
2017.05 **Hausdorff Research Institute for Mathematics**, Bonn

Education

- 2016 **Ph. D. in Mathematics**, *Ecole Normale Supérieure de Lyon*, Lyon, France
Advisor: Frédéric Déglise.
Dissertation title: *Quelques aspects sur l’homologie de Borel-Moore dans le cadre de l’homotopie motivique: poids et G-théorie de Quillen (On some aspects of Borel-Moore homology in motivic homotopy: weight and Quillen’s G-theory)*.
- 2013 **Diploma of the ENS, specialized in Mathematics**, *Ecole Normale Supérieure*, Paris, France
- 2012 **M.Sc. in Pure Mathematics**, *Université Paris-Diderot*, Paris, France
Summa cum laude
Advisor: Francis Brown.
Master thesis title: *Dénombrabilité polynomiale des hypersurfaces de graphe*.
- 2010 **B.Sc. in Mathematics**, *Université Paris-Diderot*, Paris, France
Summa cum laude

Research interests

Algebraic Geometry, Pure motives, Mixed motives, Algebraic cycles, Algebraic K-theory, Motivic homotopy theory

Mathematical texts

Publications

- 2021 F. Jin, *On some finiteness results in real étale cohomology*, to appear in Bull. Lond. Math. Soc..

- 2021 F. Déglise, F. Jin, A. Khan, *Virtual fundamental classes in motivic homotopy theory*, J. Eur. Math. Soc. **23** (2021), no. 12, 3935-3993.
- 2021 F. Déglise, J. Fasel, F. Jin, A. Khan, *On the rational motivic homotopy category*, J. Ec. Polytech. Math. **8** (2021), 533-583.
- 2021 F. Jin, E. Yang, *Künneth formulas for motives and additivity of traces*, Adv. Math. **376** (2021), Article ID 107446.
- 2016 F. Jin, *Borel-Moore motivic homology and weight structure on mixed motives*, Math. Z. **283** (2016), no. 3, 1149-1183.

Prepublications

- 2021 F. Jin, E. Yang, *The motivic nearby cycle in positive characteristic*, arXiv:2107.08603.
- 2020 F. Jin, *Local terms of the motivic Verdier pairing*, arXiv:2010.09292.
- 2020 F. Jin, H. Xie, *A Gersten complex on real schemes*, arXiv:2007.04625.
- 2018 F. Jin, *Algebraic G-theory in motivic homotopy*, arXiv:1806.03927.

Other texts

- 2012 F. Jin, *Introduction aux motifs de Voevodsky*, fourth year thesis at ENS under the supervision of Frédéric Déglise.
- 2010 S. Franceschi, F. Jin, *Irrationalité, transcendance et indépendance \mathbb{Q} -linéaire des valeurs de la fonction zêta aux points entiers*, CultureMATH-ENS Paris, march 2011, first year thesis at ENS under the supervision of Joël Merker.

Talks

- 2021.12 **Fundamental classes in motivic homotopy theory**, *seminar*, Southern University of Science and Technology
- 2021.12 **Fundamental classes in motivic homotopy theory**, *Workshop on Algebraic and Analytic Geometry*, Morningside Center of Mathematics
- 2021.07 **A Gersten complex on real schemes**, *seminar*, Peking University
- 2021.06 **A Gersten complex on real schemes**, *Oberseminar Topologie*, Universität Osnabrück
- 2021.02 **A Gersten complex on real schemes**, *seminar on \mathbb{A}^1 -topology, motives and K-theory*, Euler International Mathematical Institute in St.Petersburg
- 2020.11 **Trace maps in motivic homotopy**, *seminar on virtual fundamental classes*, Universität Duisburg-Essen
- 2020.11 **A Gersten complex on real schemes**, *RTG seminar*, Universität Duisburg-Essen
- 2020.11 **The Chern-Schwartz-MacPherson class**, *seminar on virtual fundamental classes*, Universität Duisburg-Essen
- 2020.10 **Absolute purity in motivic homotopy theory**, *seminar*, Peking University
- 2020.08 **Absolute purity in motivic homotopy theory**, *2nd Kyoto-Hefei Workshop on Arithmetic Geometry*, Kyoto University
- 2020.06 **Quasi-smooth pullbacks on algebraic cobordism**, *seminar on derived algebraic geometry and algebraic cobordism*, Universität Duisburg-Essen
- 2020.05 **Introduction to derived algebraic geometry I: derived schemes and the cotangent complex**, *seminar on derived algebraic geometry and algebraic cobordism*, Universität Duisburg-Essen
- 2020.01 **Logarithmic localized intersection product**, *seminar on Bloch's conductor formula*, Universität Duisburg-Essen

- 2019.11 **The Ogg-Shafarevich formula**, *seminar on Bloch's conductor formula*, Universität Duisburg-Essen
- 2019.10 **Absolute purity in motivic homotopy theory**, *seminar*, Bergische Universität Wuppertal
- 2019.10 **The characteristic class of a motive**, *SPP 1786 Jahrestagung*, Universität Duisburg-Essen
- 2019.05 **The motivic nearby fiber**, *seminar on $K_0(\text{Var}_k)$, motivic integration and characteristic classes*, Universität Duisburg-Essen
- 2019.04 **The characteristic class of a motive**, *motivic seminar*, Universität Zürich
- 2019.02 **Fundamental Classes in Motivic Homotopy Theory**, *seminar*, Tongji University
- 2018.11 **Presentability, compact and dualizable objects**, *workshop "The universality of \mathbb{A}^1 -motivic stable homotopy following Robalo"*, Université de Bourgogne
- 2018.10 **Mumford's infinite dimensionality theorem**, *seminar on 0-cycles and related topics*, Universität Duisburg-Essen
- 2018.08 **Category of spectra and algebraic K -theory**, *seminar "K-theory, determinant and epsilon factor"*, Universität Regensburg
- 2018.04 **Basic categorical notions in infinity categories**, *seminar "Introduction to infinity categories"*, Universität Duisburg-Essen
- 2018.04 **The Goodwillie theorem**, *seminar "Algebraic K-theory and topological cyclic homology"*, Universität Duisburg-Essen
- 2018.02 **Representability of algebraic K -theory in motivic homotopy**, *Winter School: \mathbb{A}^1 -Homotopy Theory*, Freiburg Institute for Advanced Studies
- 2017.12 **Lambda operations and Riemann-Roch theorems**, *seminar "Motivic Sheaves"*, Universität Regensburg
- 2017.05 **Artin representability theorem**, *Higher Invariant Oberseminar*, Universität Regensburg
- 2017.05 **Completely decomposable topologies and cd-structures**, *seminar "Motivic Sheaves"*, Universität Regensburg
- 2017.01 **Borel-Moore motivic homology and weight structures**, *SCMS Seminar*, Shanghai Center for Mathematical Sciences, Fudan University
- 2016.12 **Borel-Moore motivic homology and weight structures**, *SFB-Seminar*, Universität Regensburg
- 2016.11 **Motivic cohomology following Voevodsky**, *seminar "Around the Hopkins-Morel-Hoyois isomorphism"*, Universität Regensburg
- 2016.01 **Chern classes and computations of Chow groups of $SL(E)$** , *workshop "A conjecture of Suslin according to Merkurjev"*, ENS Lyon
- 2015.12 **Cycle complexes associated to cycle modules**, *workshop "A conjecture of Suslin according to Merkurjev"*, ENS Lyon
- 2015.09 **Borel-Moore motivic homology and weight structure on mixed motives**, *Seminars of Arithmetic and Motivic Geometry*, Université Paris 13
- 2014.10 **The Chow-Künneth decomposition**, *workshop*, ENS Lyon
- 2013.06 **The coniveau spectral sequence and motives**, *seminar Mathjeunes*, ENS Paris
- 2013.05 **The monodromy of the Dwork family**, *workshop "Around Fermat's Last Theorem"*, ENS Paris
- 2011.05 **Shellability and lexicographical shellability**, *workshop "Simplicial methods in algebra and topology"*, under the supervision of Benoît Fresse, ENS Paris

- 2011.03 **Ehrhard's inequality for the Gaussian measure by the heat semi-group**, *workshop "Isoperimetric inequalities"*, under the supervision of Dario Cordero-Erausquin, ENS Paris
- 2010.12 **Lehmer's problem and Dobrowolski's theorem**, *workshop "Algebra and Geometry"*, with Ruslan Maximau, under the supervision of Nicolas Ratazzi, ENS Paris
- 2010.12 **Higher categories and topological quantum field theory**, *workshop*, with François-Régis André and Olivier Wang, under the supervision of Grégory Ginot, ENS Paris

Conferences and events

- 2021.12 **Workshop on Algebraic and Analytic Geometry**, *conference*, Morningside Center of Mathematics, Beijing (online conference)
- 2021.11 **2021 Workshop on Algebraic Geometry**, *conference*, Tongji University, Shanghai
- 2021.09 **The Six-functor Formalism and Motivic Homotopy Theory**, *summer school*, Università degli Studi di Milano, Milan (online conference)
- 2021.09 **Milnor Fibrations, Degenerations and Deform**, *conference*, Centre International de Rencontres Mathématiques, Luminy (online conference)
- 2021.09 **Arithmetic Geometry - Takeshi 60**, *conference*, University of Tokyo, Tokyo (online conference)
- 2021.06 **Conference on Arithmetic Geometry in honor of Luc Illusie**, *conference*, Morningside Center of Mathematics, Beijing (online conference)
- 2021.02 **Higher Homotopical Structures, Opening Workshop**, *Intensive Research Program*, Centre de Recerca Matemàtica, Barcelona (online conference)
- 2020.09 **Motivic Geometry**, *conference*, The Centre for Advanced Study, Norwegian Academy of Science and Letters, Oslo (online conference)
- 2020.08 **2nd Kyoto-Hefei Workshop on Arithmetic Geometry**, *conference*, Kyoto University, Kyoto (online conference)
- 2020.07 **Motivic, Equivariant and Non-commutative Homotopy Theory**, *summer school*, Institut des Hautes Etudes Scientifiques, Bures-sur-Yvette (online conference)
- 2019.10 **SPP 1786 Jahrestagung**, *conference*, Universität Duisburg-Essen, Essen
- 2019.09 **School on Motives and Stacks**, *summer school*, Universität Duisburg-Essen, Essen
- 2019.09 **Computations in motivic homotopy theory**, *autumn school*, Universität Regensburg, Regensburg
- 2018.11 **The universality of \mathbb{A}^1 -motivic stable homotopy following Robalo**, *workshop*, Université de Bourgogne, Dijon
- 2018.07 **Motives and Algebraic Cycles**, *conference*, Freiburg Institute for Advanced Studies, Freiburg
- 2018.05 **Motivic homotopy theory and refined enumerative geometry**, *conference*, Universität Duisburg-Essen, Essen
- 2018.03 **Motives in Tokyo, on the occasion of Shuji Saito's 60th Birthday**, *conference*, University of Tokyo, Tokyo
- 2018.02 **K-theory, \mathbb{A}^1 -homotopy and quadratic forms**, *conference*, University of Warwick, Coventry
- 2018.02 **Winter School: \mathbb{A}^1 -Homotopy Theory**, *winter school*, Freiburg Institute for Advanced Studies, Freiburg

- 2017.07 **Motives: arithmetic, algebraic geometry and topology under the white-blue sky**, *conference*, Ludwig-Maximilians-Universität, Munich
- 2017.06 **Etats de la Recherche: Derived Algebraic Geometry and Interactions**, *conference*, Institut de Mathématiques de Toulouse, Toulouse
- 2017.05 **K-Theory and Related Fields**, *Hausdorff Trimester Program*, Hausdorff Research Institute for Mathematics, Bonn
- 2017.03 **Hot Topics: Galois Theory of Periods and Applications**, *conference*, Mathematical Sciences Research Institute, Berkeley
- 2016.10 **Cubic fourfolds, hyper-Kähler varieties and algebraic cycles**, *conference with mini-course by Claire Voisin*, Institut Camille Jordan, Lyon
- 2016.06 **Aspects pro-finis dans la topologie**, *Journée de Géométrie et Topologie Clermont-Ferrand-Grenoble-Lyon*, ENS Lyon, Lyon
- 2016.06 **Algèbre et Théorie des Nombres, Rencontres Lyon/Ottawa**, *conference*, Institut Camille Jordan, Lyon
- 2015.06 **Mathematics of the 21st century: the vision of Alexander Grothendieck**, *conference*, Université de Montpellier, Montpellier
- 2015.05 **Géométrie, arithmétique et physique: autour des motifs**, *95e rencontre entre mathématiciens et physiciens théoriciens*, Institut de Recherche Mathématique Avancée, Strasbourg
- 2014.09 **(A)round forms, cycles and motives**, *conference*, Johannes Gutenberg-Universität Mainz, Mainz
- 2014.08 **International Conference on K-Theory and Related Topics**, *conference*, Chinese Acad. of Sciences, Beijing
- 2014.06 **Valeurs spéciales de fonctions L** , *summer school*, ENS Lyon, Lyon
- 2013.09 **Motivic Galois Groups**, *summer school/conference*, Alfréd Rényi Institute of Mathematics, Budapest
- 2013.07 **International Congress of Chinese Mathematicians**, National Taiwan University, Taipei
- 2013.06 **Géométrie Arithmétique p -adique**, *conference*, ENS Lyon, Lyon
- 2012.01 **Arithmetic, Motives and Moduli Spaces**, *colloquium*, ENS Paris, Paris
- 2011.10 **Galois bicentenary conference**, *conference*, Institut des Hautes Etudes Scientifiques, Bures-sur-Yvette
- 2011.06 **Motives and Milnor conjecture**, *summer school*, Institut de Mathématiques de Jussieu, Paris
- 2010.10 **Journée d'exposés sur les travaux de Gregori Margulis**, ENS Paris, Paris

Teaching experience

- 2021-2022 **Advanced Algebra I**, *undergraduate course*, Tongji University
- 2020-2021 **Exercise sessions for the course *Mathematical Analysis II***, *undergraduate course*, Tongji University
- 2018-2019 ***Algebraic Topology II***, *graduate course*, Universität Duisburg-Essen
- 2018-2019 ***Introduction to Topology***, *undergraduate course*, Universität Duisburg-Essen
- 2017-2018 ***Algebraic Topology II***, *graduate course*, Universität Duisburg-Essen
- 2017-2018 **Exercise sessions for the course *Algebraische Topologie***, *graduate course*, Universität Regensburg

- 2016-2017 **Exercise sessions for the course *Higher category theory and homotopical algebra*, graduate course, Universität Regensburg**
- 2013-2016 **Exercise sessions for the course *Algèbre 2*, third year undergraduate course, ENS Lyon**
- 2014-2016 **Exercise sessions for the course *Algèbre 1*, third year undergraduate course, ENS Lyon**
- 2013-2014 **Oral examiner at the *CPES class*, first year undergraduate class, ENS Lyon**

Linguistic skills

Chinese Native
English Fluent
French Fluent
Japanese Elementary
German Beginner