

## Lei Zhang

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- PERSONAL DATA Sex: male Birthday: Nov. 25 1983  
Contact Information:  
School of Mathematical Sciences  
University of Science and Technology of China  
Jinzhai Avenue 96, Baohe District  
Hefei 230026 P.R.China  
*E-mail:* zhlei18@ustc.edu.cn
- RESEARCH INTEREST Algebraic Geometry: Algebraic Surface, Irregular Variety, Minimal Model Theory in positive characteristic.
- EDUCATION Ph.D., School of Mathematical Science, Peking University, 2005-2011
- Thesis: Bicanonical maps of surfaces and irregular varieties
  - Advisor: Professor Jin-Xing Cai
- B.S., Department of Mathematics, Tianjin University, 2001-2005
- TEACHING 2020 Fall, Basic Algebraic Geometry I: Algebraic curves (An introduction to AG), William Fulton  
2020 Spring, Modern Algebra  
2019 Fall, Basic Algebraic Geometry 1: Varieties in Projective Space Igor R. Shafarevich  
2019 Spring, Algebraic geometry and arithmetic curves, Qing Liu  
2018 Fall, Complex Variable Functions  
2018 Spring, Riemann Surface  
2017 Fall, Advanced Mathematics I  
2017 Spring, Advanced Mathematics II  
2016 Fall, Abstract Algebra for undergraduate students, Algebra for graduated students  
2015 Fall, Abstract Algebra for undergraduate students, Algebra for graduated students  
2015 Spring, Advanced Mathematics II  
2014 Fall, Linear Algebra  
2014 Spring, Advanced Mathematics II  
2012 Fall, Advanced Mathematics II
- EMPLOYMENT School of Mathematical Science, University of Science and Technology of China, Assistant Professor, January 2018–Present  
School of Mathematical and Information Science, Shaanxi Normal University, Associate Professor, June 2015 – January 2018  
School of Mathematical and Information Science, Shaanxi Normal University, Lecturer, June 2011 – 2014
- RECENT ACADEMIC ACTIVITIES [11] Chinese Mathematical Society 2019 Annual Conference (Foshan Guangdong), Nov. 21-24, 2019.
- Talk title: Subadditivity of Kodaira dimension in positive characteristic.
- [10] Workshop on Birational Geometry and Related Topics (Shanghai Center for Mathematical Sciences), Nov. 1-11 2018.
- Talk title: Nonvanishing for 3-folds in characteristic  $p > 5$ .
- [9] Positivity in Algebraic Geometry (Yonsei University Seoul), June 4-8 2018.

- Talk title: Positivity and Iitaka conjecture in characteristic  $p > 0$ .
- [8] Tianyuan Advanced Seminar (Fudan University Shanghai), April 4-8 2018.
- Talk title: Positivity in characteristic  $p > 0$ .
- [7] The First Conference of Algebraic Geometry of China (Beijing), July 3-7 2017.
- Talk title: Abundance for 3-folds with non-trivial Albanese maps in char  $p > 5$ .
- [6] BICMR-Tokyo Algebraic Geometry Workshop (Beijing), May 5-7 2017.
- Talk title: Characterization of abelian varieties in characteristic  $p$ .
- [5] Program of Higher Dimensional Algebraic Geometry, Holomorphic Dynamics and Their Interactions (Singapore), Jan. 2017.
- Talk title: Iitaka conjecture and abundance for 3-folds in characteristic  $p > 5$ .
- [4] The Conference on Algebraic Geometry (Xiamen), Jan. 2017
- Talk title: Iitaka conjecture and abundance for 3-folds in characteristic  $p > 5$ .
- [3] Visiting Korea Institute of Advanced Study (Seoul), July 18–Aug. 14, 2016.
- [2] Visiting Beijing International Center for Mathematical Research, Feb. 18–July 18, 2016.
- [1] The sixth East Asian Conference on Algebraic Geometry (Tokyo), Jan. 2016.
- Talk title: Subadditivity of Kodaira dimensions in characteristic  $p > 5$ .

- PUBLICATIONS [16] Lei Zhang, *Abundance for threefolds with non-trivial Albanese maps in positive characteristic*, Journal of the European Mathematical Society 22 (2020), no. 9, 2777–2820.
- [15] Lei Zhang, *Subadditivity of Kodaira dimensions for fibrations of three-folds in positive characteristics*, Advances in Mathematics 354 (2019), arXiv: 1601.06907.
- [14] C.D. Hacon, Z. Patakfalvi and L. Zhang, *Birational characterization of abelian varieties and ordinary abelian varieties in characteristic  $p > 0$* , Duke Mathematical Journal **168** (9) (2019), 1723–1736.
- [13] Chenyang Xu and Lei Zhang, *Nonvanishing for threefolds in characteristic  $p > 5$* , Duke Mathematical Journal, **168** (7) (2019), 1269–1301.
- [12] Lei Zhang, *Abundance for non-uniruled 3-folds with non-trivial Albanese maps in positive characteristics*, Journal of the London Mathematical Society, **99** (2) (2019), 332–348.
- [11] Yong, Hu and Lei Zhang, *Surfaces with  $p_g = q = 1$ ,  $K^2 = 6$  and non-birational bicanonical maps*, Acta Mathematica Sinica (English Series) 35 (3) (2019), 321–337.
- [10] Sho Ejiri and Lei Zhang, *Iitaka’s conjecture for 3-folds in positive characteristic*, Mathematical Research Letters **25** (2018), 783–802.
- [9] Lei Zhang, *A note on Iitaka’s conjecture  $C_{3,1}$  in positive characteristics*, Taiwanese Journal of Mathematics, 21 (2017), 689–704.
- [8] Caucher Birkar, Yifei Chen and Lei Zhang, *Iitaka’s  $C_{n,m}$  conjecture for 3-folds over finite fields*, Nagoya Mathematical Journal, 229 (2018), 21–51.
- [7] Lei Zhang, *Surfaces with  $p_g = q = 1$ ,  $K^2 = 7$  and nonbirational bicanonical maps*, Geometriae Dedicata 177 (2015), 293–306.
- [6] Yifei Chen and Lei Zhang, *The subadditivity of the Kodaira dimension for fibrations of relative dimension one in positive characteristic*, Mathematical Research Letters 22 (2015), 675–696.
- [5] Lei Zhang, *The cohomological support locus of pluricanonical sheaves and the Iitaka fibration*, Journal of the London Mathematical Society 90 (2014), 592–608.

- [4] Lei Zhang, *A note on the linear systems on the projective bundles over abelian varieties*, Proceedings of the American Mathematical Society 142 (2014), 2569–2580.
- [3] Lei Zhang, *On the bicanonical map of primitive varieties with  $q(X) = \dim X$ : the degree and the Euler number*, Mathematische Zeitschrift 277 (2014), 575–590.
- [2] Jin-xing Cai, Wenfei Liu and Lei Zhang, *Automorphisms of surfaces of general type with  $q \geq 2$  acting trivially in cohomology*, Compositio Mathematica 149 (2013), 1667–1684.
- [1] Lei Zhang, *Characterization of a class of surfaces with  $p_g = 0$  and  $K^2 = 5$  by their bicanonical maps*, Manuscripta Mathematica 135 (2011), 165–181.

PREPRINTS

- [17] Yi Gu, Lei Zhang and Yongming Zhang, *Counterexamples to Fujita’s conjecture on surfaces in positive characteristic*, arXiv: 2002.04584.
- [18] Paolo Cascini, Sho Ejiri, Janos Kollar and Lei Zhang, *Subadditivity of Kodaira dimension does not hold in positive characteristic*, arXiv: 2003.13206.
- [19] Lei Zhang, *Frobenius stable pluricanonical systems on threefolds of general type in positive characteristic*, arXiv: 2010.08897