

Bingyi Chen

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RESEARCH INTERESTS Algebraic geometry - Singularity theory, Mixed Hodge modules, The theory of \mathcal{D} -modules, Birational geometry

EDUCATION **Tsinghua University** Aug. 2016 - Jul. 2021 (scheduled)

- Ph.D. Candidate in Pure Mathematics
- Advisor: Stephen Shing-Tung Yau

Northwestern University Oct. 2019 - Mar. 2020

- Visiting student at Department of Mathematics
- Mentor: Mihnea Popa

Tsinghua University Sep. 2012 - Jun. 2016

- B.S. in Mathematics

- PUBLICATIONS**
1. $4d \mathcal{N} = 2$ SCFT and singularity theory Part II: complete intersection (with Dan Xie, Shing-Tung Yau, Stephen Yau and Huaiqing Zuo), *Adv. Theor. Math. Phys.* **21** (2017), no. 1, 121-145.
 2. $4d \mathcal{N} = 2$ SCFT and singularity theory Part III: Rigid singularity (with Dan Xie, Shing-Tung Yau, Stephen Yau and Huaiqing Zuo), *Adv. Theor. Math. Phys.* **22** (2018), no. 8, 1885-1905.
 3. $4d \mathcal{N} = 2$ SCFT and singularity theory part IV: isolated rational Gorenstein non-complete intersection singularities with at least one-dimensional deformation and nontrivial T2 (with Shing-Tung Yau, Stephen Yau and Huaiqing Zuo), (to appear), *Math. Res. Lett.*, 2020.
 4. The nonexistence of negative weight derivations on positive dimensional isolated singularities: Generalized Wahl conjecture (with Hao Chen, Stephen Yau and Huaiqing Zuo), *J. Diff. Geom.* **115** (2020), no. 2, 195-224.
 5. Variation of complex structures and variation of Lie algebras II: new Lie algebras arising from singularities (with Stephen Yau, Naveed Hussain and Huaiqing Zuo), *J. Diff. Geom.* **115** (2020), no. 3, 437-473.
 6. Bergman functions and the equivalence problem of singular domains (with Stephen Yau), (to appear), *Commun. Anal. Geom.*, 2020.
 7. Vanishing for Hodge ideals of \mathbb{Q} -divisors, preprint 2020, arXiv:2004.05536v2.
 8. Upper bound of discrepancies of divisors computing minimal log discrepancies on surfaces, preprint 2020, arXiv:2009.03613v1.

**HONORS
& AWARDS**

- Tsinghua Scholarship for Overseas Graduate Studies Oct. 2019 - Mar. 2020
- Excellent Postgraduate Award, Yau Mathematical Sciences Center 2018
- China National Scholarship 2018
- Full Scholarship of Yau Mathematical Sciences Center 2017-2020
- Silver Award for ICCM Best Paper Award, International Congress of Chinese Mathematicians 2017
- Gold Medal of Bachelor Thesis for New World Mathematics Award, International Congress of Chinese Mathematicians 2017
- Member of Xuetao Program of Tsinghua University 2014-2016

SEMINARS

- Reading Seminar: Superrigidity of hypersurfaces, Academy of Mathematics and Systems Science 2019 Spring
- Student Seminar on Ubiquity of Root Systems, Tsinghua University 2017 Fall
- Student Seminar on Hodge Theory, Tsinghua University 2017 Spring
- Student Seminar on Linear Algebraic Groups, Tsinghua University 2016 Fall
- Student Seminar on Moduli Space of Curves, Tsinghua University 2016 Spring

**CONFERENCE
ATTENDED**

- PKU-KUL Joint Algebraic Geometry Workshop, Beijing International Center for Mathematical Research Center, Sep. 2 - 4, 2019
- The 8th International Congress of Chinese Mathematicians, Tsinghua University, Jun. 9 - 14, 2019
- TianYuan Advanced Seminar in Algebraic Geometry, Tianjin University, May 28 - 31, 2019
- Winter School on Algebraic Curves, Riemann Surfaces and Moduli Spaces, Morning-side Center of Mathematics, Mar. 4 - 8, 2019
- International Conference on Singularity Theory and Dynamical Systems - in Memory of John Mather, Tsinghua Sanya International Mathematics Forum, Dec. 11-15, 2017
- International Conference on Algebraic Geometry, Yau Mathematical Science Center, Dec. 8 - 10, 2017
- International conference on Singularity Theory, East China Normal University, July 10-14, 2017
- The 7th International Congress of Chinese Mathematicians, AMSS and Morning-side Center of Mathematics, Aug. 6 - 11, 2016

**TEACHING
EXPERIENCE**

- Teaching Assistant of Linear Algebras II (Undergraduate) Spring 2019
- Teaching Assistant of Lie Groups and Lie Algebras (Graduate) Fall 2018
- Teaching Assistant of Probability Theory (Undergraduate) Spring 2018
- Teaching Assistant of Calculus I (Undergraduate) Fall 2017
- Teaching Assistant of Calculus I (Undergraduate) Fall 2016