

Xia Liao

Mailing Address

Department of Mathematical Sciences, Huaqiao University
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Education

Florida State University, Tallahassee, FL
Ph.D. in Mathematics, *August 2013*, Advisor: Paolo Aluffi
Dissertation: Chern Classes of Sheaves of Logarithmic Vector Fields for Free Divisors

Peking University, Beijing, China
B.S in Physics, *July 2007*

Academic Positions

9/2013 - 12/2014 : Postdoc position (Wissenschaftlicher Mitarbeiter), Kaiserslautern University of Technology.

2/2015 - 4/2015: Oberwolfach Leibniz Fellow, Mathematisches Forschungsinstitut Oberwolfach.

6/2015 - 5/2017: Postdoc Research Fellow, KIAS

5/2017 - 6/2017: Visiting position at KIAS

2/2018 - now: Lecturer at Huaqiao University

Research Interests

- Characteristic Classes of Singular Varieties
- Free Divisors
- Discriminants

Published/Accepted Papers

1. K-theoretic Defect in Chern Class Identity For a Free Divisor. *International Mathematics Research Notices*, <https://doi.org/10.1093/imrn/rnx305>.
2. A Cohomological Interpretation of Derivations on Graded Algebras. With Mathias Schulze, *Beiträge zur Algebra und Geometrie*, Article DOI: 10.1007/s13366-017-0357-3.
3. Quasihomogeneous Free Divisors with Only Normal Crossings in Codimension One. With Mathias Schulze, *Mathematical Research Letters*, <http://dx.doi.org/10.4310/MRL.2017.v24.n5.a7>.
4. Chern Classes of Logarithmic Derivations For Free Divisors with Jacobian Ideal of Linear Type. *accepted by the Journal of the Mathematical Society of Japan*, *arXiv:1210.6079*.

5. Chern Classes of Logarithmic Vector Fields For Locally Quasi-Homogeneous Free Divisors. *accepted by Mathematical Research Letters, arXiv:1205.3843.*
6. Chern Classes of Logarithmic Vector Fields. *Journal of Singularities, 5:109-114, 2012.* <http://www.journalofsing.org/volume5/liao.pdf>.
7. Stable Birational Equivalence and Geometric Chevalley-Waring. *Proc. Amer. Math. Soc., 141(12):4049-4055, 2013.* [https://doi.org/10.1090/S0002-9939-2013-11722-3.](https://doi.org/10.1090/S0002-9939-2013-11722-3)

Preprints

1. On The Explicit Calculation of Hirzebruch-Milnor Classes of Hyperplane Arrangements. With Younghoo Yoon, *in preparation.*
2. An approach to Lagrangian specialisation through MacPherson's graph construction. *in preparation.*

Teaching Experience

- **Tutorial instructor** Algebraic Geometry, Spring 2014, Kaiserslautern University of Technology, Germany.
- **Instructor** MAC2313, CALCULUS 3, Spring 2013, Florida State University.
- **Instructor** MAC2311, CALCULUS 1, Fall 2012, Florida State University.
- **Instructor** MAC1140, PRECALCULUS ALGEBRA, Spring 2012, Florida State University.
- **Recitation Instructor.** MAC2311, CALCULUS 1, Fall 2011, Florida State University.
- **Instructor** MAC1140, PRECALCULUS ALGEBRA, Spring 2011, Florida State University.
- **Recitation Instructor.** MAC2311, CALCULUS 1, Fall 2010, Florida State University.
- **Recitation Instructor.** MAC2311, CALCULUS 1, Spring 2010, Florida State University.
- **Instructor.** MAC2311, PRECALCULUS ALGEBRA, Fall 2009, Florida State University.
- **Lab Instructor.** COLLEGE ALGEBRA/TRIGONOMETRY/PRECALULUS ALGEBRA, Fall 2007-Spring 2009, Florida State University.

Conferences

- Second French-Korean Conference in Mathematics, Bordeaux, July 7-12, 2016.
- Workshop on Hyperplane Arrangements and Singularity Theory, Hokkaido, March 22-25, 2016. Talk: "Hirzebruch classes for singular curves".
- Differential and combinatorial aspects of singularities, Kaiserslautern, August 3-7, 2015. Talk: "Hirzebruch classes for singular curves".
- Arrangements of Hyperplanes, International Symposium, Bremen University, December 1-3, 2014. Talk: "free divisors with normal crossings".
- Symposium on Singularities and Their Topology, IAG, Hannover University, July 14-17, 2014. Talk: "Normal Crossing Property for Quasihomogeneous Free Divisors".
- Conference of Arrangements and Characteristic Classes, RIMS, Kyoto, November 11-15, 2013. Talk: "Chern classes of logarithmic derivations for free divisors."
- The Commutative Algebra of Singularities in Birational Geometry: Multiplier Ideals, Jets, Valuations, and Positive Characteristic Methods, MSRI, May 06, 2013 - May 10, 2013.

- 2013 Joint Mathematics Meetings, San Diego, CA, January 9-12. Talk: “Chern Classes of Sheaves of Logarithmic Vector Fields for Locally Quasi-Homogeneous Free Divisors.” AMS Session on Algebraic Varieties, Moduli Spaces, and Singularities.
- 2012 Joint Mathematics Meetings, Boston, MA, January 4-7. Talk: “Chern Classes of Sheaves of Logarithmic Vector Fields.” AMS Session on Algebraic Geometry, I.
- Singularity Theory Conference, Hefei, China, July 25-31, 2011.

**Professional
Activities**

- Reviewer for International Mathematics Research Notices.

Language Skills

- Proficient in English and Chinese.
- Reading competence in French.