HAITAO ZOU

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EDUCATION

Fudan University, Shanghai China *Sept 2021 -*
Ph.D, Pure Mathematics,
Shanghai Center of Mathematical Sciences.
Advisor: Zhiyuan Li

Fudan University, Shanghai China *Sept 2017 - June 2021*
Master of Science, Pure Mathematics,
School of Mathematical Science.
Advisor: Zhiyuan Li

Sichuan University, Chengdu, Sichuan China *Sept 2012 - July 2017*
Bachelor of Science, Pure and Applied Mathematics, July 2017.

RESEARCH INTERESTS

- Algebraic geometry:
  - ⋆ the hyperhähler geometry in positive characteristic
  - ⋆ derived category of schemes
  - ⋆ deformation theory
  - ⋆ moduli of (twisted) sheaves
  - ⋆ ...
- Arithmetic geometry and applications of algebraic topology on it:
  - ⋆ crystalline cohomology and topolocial Hochschild homology
  - ⋆ p-adic Hodge theory
  - ⋆ ...

PUBLICATIONS AND PREPRINTS

1. Supersingular O'Grady's varieties of dimension six (with Lie Fu and Zhiyuan Li), IMRN (2022), arXiv:2009.10959.
2. A note on Fourier-Mukai partners of abelian varieties over positive characteristic fields (with Zhiyuan Li), *to appear in Kyoto Journal of Mathematics*, arXiv:2107.05404.
3. Derived isogenies and isogenies for abelian surfaces (with Zhiyuan Li), *submitted*, arXiv:2108.08710.
4. Unpolarized Shafarevich conjectures for hyper-Kähler varieties (with Lie Fu, Zhiyuan Li and Teppei Takamatsu), *submitted*, arXiv:2203.10391.
5. On the derived category of varieties in positive characteristics (Master thesis).

TEACHINGS

- 2020.2-2020.6 Modern Algebra III(H), TA

- 2019.9-2019.12 Algebraic Geometry, TA
- 2019.2-2019.7 Linear Algebra II, TA
- 2018.9-2018.12 Abstract Algebra I, TA
- 2018.2-2018.7 PDEs in Mathematical Physics, TA
- 2017.9-2017.12 Advanced Mathematics C (I), TA

ACTIVITIES

Past seminars and topics of my talks:

1. 2020.9-12 Learning Seminar on "Kottwitz-Langlands-Rapoport Conjecture"
2. 2020.3-6 Learning Seminar on "Hodge conjectures"
   (a) variational Hodge conjecture (I): algebraic de Rham cohomology and Gauss-Manin connection
   (b) variational Hodge conjecture (II): the equivalence bewteen VHS and IHS.
3. 2019.8 Reading Workshop on OG10, SCMS, Shanghai China
   (a) singularities of moduli of sheaves and the construction of OG10
4. 2019.2-2019.9 Research talks on given in SCMS:
   (a) uniqueness of dg-enhancements and its applications to the formality conjecture;
   (b) an introduction to ∞-categories;
   (c) the Kuznetsov component in derived category of cubic fourfolds;
   (d) Fourier-Mukai partners of Abelian or K3 surfaces in positive characteristic
5. 2018.9-2019.1 Learning seminar on "Motives and Motivic Homotopy theory" notes
   (a) an introduction to model category and simplicial homotopy theory;
   (b) Bousfield localization;
   (c) motivic homotopy theory and motivic cohomology theory.
6. 2018.2 -2018.9 Learning seminar on "Hodge theory and related topics"
   (a) an introduction to Hodge theory and the Hodge-de Rham spectral sequence;
   (b) the standard conjecture and Tate conjecture.
7. 2017.9 - 2018.1 Learning seminar on "Stacks and Moduli Problems".
   (a) fibered category and the language of 2-categories.

Conferences:

1. 2019.8 Periods and Motives, Berlin German
2. 2019.6 Tianyuan Advanced Seminar in Algebraic Geometry, Tianjin China
3. 2018.9 - 2018.11 Fall Program of Moduli Spaces and Varieties, Shanghai China
4. 2018.6 The Joint International Meeting of CMS & AMS, Shanghai China
5. 2018.4 Tianyuan Advanced Seminar on the Moduli Spaces in Algebraic Geometry, Shanghai China

6. 2019.6 Joint CNU-USTC-SUST Seminar on p-adic Deformation of Algebraic Cycle Classes after Bloch-Esnault-Kerz, SUST, Shengzhen China

Others:

1. 2017.1 - 2017-6 Enhanced Program for Graduate Study, BICMR, Beijing China

LANGUAGES

Working languages: Chinese & English.

I'm also a beginner in learning French.