

# Yaxiong Liu

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🌐 <https://yaxiongliu23.github.io/>

Citizenship: China, Sex: Male, Date of birth: February 28, 1995.

## Research Interests

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Kähler geometry, Algebraic geometry, especially K-stability of polarized varieties, Several complex variables and complex geometry.

## Education

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**Tsinghua University – Beijing, China**

**September 2020 – June 2023**

*PhD in Mathematics*

Supervisor: Professor Akito Futaki.

**Institute of Mathematics, Academy of Mathematics and**

**Systems Science, Chinese Academy of Sciences – Beijing, China** **September 2017 – June 2020**

*M.S. in Mathematics*

Supervisors: Professor Weidong Ruan, Professor Jiayu Li.

**Lanzhou University – Lanzhou, China**

**September 2013 – June 2017**

*B.S. in Mathematics and Applied Mathematics*

Supervisor: Professor Wei zhang.

## Employment

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**University of Maryland – College Park, US**

**August 2023 – Present**

*Postdoc in Mathematics*

Mentor: Professor Tamás Darvas.

## Honors and Scholarships

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**2022**

- National Scholarship for Graduate Student (China)
- Excellent Postgraduate Award (Yau Mathematical Sciences Center in Tsinghua University)  
*The scholarship is supported by Professor Yau, the so-called Ruolin graduate Award, named by his mother.*

**2021**

- Excellent Postgraduate Award (Yau Mathematical Sciences Center in Tsinghua University)
- Comprehensive Scholarship (Tsinghua University)

## Publications and Preprints

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- Y. Liu, Zhuo Liu, Hui Yang, and Xiangyu Zhou, *A Le Potier-type isomorphism twisted with multiplier submodule sheaves*, preprint.
- Y. Liu, *Openness of uniformly valutive stability on the Kähler cone of projective manifolds*, Math. Z. 303 (2023), no 2, 52.
- Y. Liu, *Uniform K-stability and conformally Kähler, Einstein-Maxwell geometry on toric manifolds*, Tohoku Math. J. (2) 74 (2022), no 1, 1-21.

## Teaching and TA Experiences

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**Teaching**

- Department of Mathematics, University of Maryland
  - Math-436: *Differential geometry of curves and surfaces I*, Fall, 2023

## TA

- School of Mathematical Sciences, Tsinghua University
  - *Complex Geometry*, Spring, 2023.
  - *Topics in Complex Geometry*, Fall, 2022.
  - *Differential geometry III–Complex Geometry*, Spring, 2022.
  - *Differential geometry III–Complex Geometry*, Spring, 2021.
- School of Mathematical Sciences, University of Chinese Academy of Sciences
  - *Differential geometry*, Fall, 2018.
  - *Calculus III*, Fall, 2017.

## Academic Visits

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- June 2023, Westlake University, visiting Prof. Jiyuan Han for one week.
- February 2017–June 2017, Enhanced Program for Graduate Study, Beijing International Center For Mathematical Research.

## Invited Talks

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- 10 2023, A Le Potier-type Isomorphism with Multiplier Submodule Sheaves, Geometry and Geometric Analysis seminar in Purdue
- 10 2023, The eigenvalue problem of complex Hessian operators, IGA seminar, UMD
- 6 2023, Recent progress on the valuative stability of polarized varieties, ITS seminar, Westlake University
- 12 2022, Uniformly valuative stability of polarized varieties and applications, IGA seminar, Maryland University
- 11 2022, Uniformly valuative stability of polarized varieties and applications, Tsinghua University
- 12 2020, Uniform K-stability and cKEM geometry on toric manifolds, Chinese Academy of Sciences.
- 12 2020, Geodesic rays and stability in the cscK problem, Beijing Geometric Analysis Day in Xiangshan.
- 10 2020, Uniform K-stability and cKEM geometry on toric manifolds, Peking University.