

# Tsung-Ju Lee (李宗儒)

Assistant Professor at the Department of Mathematics, National Cheng Kung University

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## Research Interests

- Algebraic geometry and complex differential geometry, especially focusing on their applications to Calabi–Yau varieties and their moduli problems.

## Education

Aug 2010 – June 2016 **National Taiwan University**, Ph.D. in Mathematics – Taipei, Taiwan

- Advisor: Professor Chin-Lung Wang and Professor Hui-Wen Lin
- Dissertation: *Geometry arising from periods of Calabi–Yau degenerations and transitions*

Aug 2004 – Jan 2008 **National Taiwan University**, B.S. in Mathematics – Taipei, Taiwan

## Experience

Sept 2023 – present **Assistant professor**, National Cheng Kung University – Tainan, Taiwan

- Description 1.
- Description 2.

Sept 2018 – Aug 2023 **Postdoctoral Fellow**, Center of Mathematical Sciences and Applications, Harvard University – Cambridge, MA

Feb 2018 – Aug 2018 **Postdoctoral Fellow**, National Taiwan University – Taipei, Taiwan

Nov 2016 – Oct 2017 **Airman**, Ministry of Defense, Taiwan – Taipei, Taiwan  
Completed mandatory military service in Taiwan.

## Preprints

Oct 2025 **Mirror symmetry for singular double cover Calabi–Yau varieties: quantum test**

Tsung-Ju Lee, Bong H. Lian, Shing-Tung Yau  
[arxiv.org/abs/2510.05470](https://arxiv.org/abs/2510.05470) (arXiv)

July 2025 **Non-commutative resolutions and pre-quotients of Calabi–Yau double covers**

Tsung-Ju Lee, Bong H. Lian, Mauricio Romo, Leonardo Santilli  
[arxiv.org/abs/2507.00633](https://arxiv.org/abs/2507.00633) (arXiv)

Jan 2025 **A supplement to the anticanonical volumes of weak Q-Fano threefolds of Picard rank two**

Ching-Jui Lai, Tsung-Ju Lee  
[arxiv.org/abs/2502.19419](https://arxiv.org/abs/2502.19419) (arXiv)

July 2023 **Non-commutative resolutions as mirror of singular Calabi–Yau varieties**  
Tsung-Ju Lee, Bong H. Lian, Mauricio Romo  
[arxiv.org/abs/2307.02038](https://arxiv.org/abs/2307.02038) (arXiv)

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## Publications

- Mar 2025 **Finite distance problem on the moduli of non-Kähler Calabi–Yau ddbar-threefolds**  
Tsung-Ju Lee  
[10.1007/s00208-025-03115-8](https://doi.org/10.1007/s00208-025-03115-8) (Math. Ann. **392** (2025), 1541-1583)
- Mar 2025 **Twisted GKZ hypergeometric functions and relative homology**  
Tsung-Ju Lee, Dingxin Zhang  
[10.1007/s00208-024-03058-6](https://doi.org/10.1007/s00208-024-03058-6) (Math. Ann. **391** (2025), 5553-5580)
- Aug 2024 **On a conjecture of Huang–Lian–Yau–Yu**  
Tsung-Ju Lee, Bong H. Lian, Dingxin Zhang  
[10.4310/CAG.2023.v31.n6.a1](https://doi.org/10.4310/CAG.2023.v31.n6.a1) (Comm. Anal. Geom. **31** (2023), no. 6, 1341-1352.)
- May 2024 **Mirror symmetry for double cover Calabi–Yau varieties**  
Shinobu Hosono, Tsung-Ju Lee, Bong H. Lian, Shing-Tung Yau  
[10.4310/jdg/1717356161](https://doi.org/10.4310/jdg/1717356161) (J. Differential Geom. **128** (2024), no. 1, 1-35)
- Jan 2024 **SYZ mirror symmetry for del Pezzo surfaces and affine structures**  
Siu-Cheong Lau, Tsung-Ju Lee, Yu-Shen Lin  
[10.1016/j.aim.2024.109488](https://doi.org/10.1016/j.aim.2024.109488) (Adv. Math. **439** (2024), 109488)
- July 2023 **A note on periods of Calabi–Yau fractional complete intersections**  
Tsung-Ju Lee  
[10.1007/s00209-023-03321-70](https://doi.org/10.1007/s00209-023-03321-70) (Math. Z. **304** (2023), article number 60)
- June 2023 **On the complex affine structures of SYZ fibration of del Pezzo surfaces**  
Siu-Cheong Lau, Tsung-Ju Lee, Yu-Shen Lin  
[10.4310/ATMP.2022.v26.n6.a7](https://doi.org/10.4310/ATMP.2022.v26.n6.a7) (Adv. Theor. Math. Phys. **26** (2023), no. 4, 921-955)
- May 2023 **Period domains for gravitational instantons**  
Tsung-Ju Lee, Yu-Shen Lin  
[10.1090/tran/8856](https://doi.org/10.1090/tran/8856) (Trans. Amer. Math. Soc. **376** (2023), 5461-5501)
- Feb 2022 **On Calabi–Yau fractional complete intersections**  
Tsung-Ju Lee, Bong H. Lian, Shing-Tung Yau  
[10.4310/PAMQ.2022.v18.n1.a10](https://doi.org/10.4310/PAMQ.2022.v18.n1.a10) (Pure Appl. Math. Q. **18** (2022), no. 1, 317-342)
- Nov 2020 **A-hypergeometric systems and relative cohomology**  
Tsung-Ju Lee, Dingxin Zhang  
[10.1142/S0129167X2050113X](https://doi.org/10.1142/S0129167X2050113X) (Int. J. Math. **31** (2020), no. 13, 2050113)
- July 2019 **Tautological systems under the conifold transition on  $G(2,4)$**   
Tsung-Ju Lee, Hui-Wen Lin  
[10.4310/AJM.2019.v23.n3.a7](https://doi.org/10.4310/AJM.2019.v23.n3.a7) (Asian J. Math. **23** (2019), no. 3, 501-526)

July 2018 **A Hodge theoretic criterion for finite Weil–Petersson degenerations over a higher dimensional base**  
Tsung-Ju Lee  
[10.4310/MRL.2018.v25.n2.a14](https://doi.org/10.4310/MRL.2018.v25.n2.a14) (Math. Res. Lett. **25** (2018), no. 2, 617-647)

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## Grants

Nov 2023 – July 2026 **National Science and Technology Council (NSTC) Research Grant**  
Grant Number: NSTC 112-2115-M-006-001  
PI: Tsung-Ju Lee (李宗儒)  
[www.nstc.gov.tw](http://www.nstc.gov.tw)

July 2020 – June 2023 **AMS Simons Travel Grant**  
The AMS Simons Travel Grant is a grant awarded to early-career faculty who have the potential to serve as academic role models in research and education.  
PI: Tsung-Ju Lee  
[www.ams.org/grants-awards/travel-grants/AMS-SimonsTG](http://www.ams.org/grants-awards/travel-grants/AMS-SimonsTG)

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## Invited Talks

Oct 2025 **Mirror symmetry for singular double cover Calabi–Yau varieties: quantum test – Taipei, Taiwan**

July 2025 **Non-commutative resolutions and pre-quotients of Calabi-Yau double covers – Massachusetts, USA**

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## Languages

**Mandarin Chinese**

Native speaker

**English**

Fluent