

# Chao-Ming LIN

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## Interests

Differential Geometry / Complex Geometry / Geometric Analysis / Real Algebraic Geometry.

## Education

- \_\_\_\_\_ Sep 2017–June 2023  
Ph.D. in Mathematics  
University of California, Irvine  
Advisors: [Zhiqin Lu](#) and [Xiangwen Zhang](#)  
Thesis: [Class of Curvature Equations, Convexity, and Real Algebraic Geometry](#)
- \_\_\_\_\_ Sep 2014–July 2016  
M.S. in Mathematics  
National Taiwan University  
Advisor: [Chung-Jun Tsai](#)  
Thesis: Survey on  $G_2$  manifolds and further applications
- \_\_\_\_\_ Sep 2010–May 2014  
B.S. in Mathematics  
National Taiwan University

## Work Experience

- \_\_\_\_\_ Aug 2023–Present  
Zassenhaus Assistant Professor  
[Ohio State University](#)  
Mentor: [Bo Guan](#)
- \_\_\_\_\_ Aug 02 2023–Aug 07 2023  
Visitor in Mathematics  
[Chinese University of Hong Kong](#)  
Mentor: [Man Chun Lee](#)
- \_\_\_\_\_ July 2023–Aug 2023  
Visitor in Mathematics  
[National Taiwan University](#)  
Mentor: [Chung-Jun Tsai](#)

Nov 2022–Dec 2022, Dec 2020–April 2021  
Visitor in Mathematics  
National Center for Theoretical Sciences  
Mentor: Chung-Jun Tsai

Aug 2016–June 2017  
R.A. in Mathematics  
National Center for Theoretical Sciences  
Mentor: Chung-Jun Tsai

## Papers

Oct 2023  
*On the Solvability of General Inverse  $\sigma_k$  Equations*  
<https://arxiv.org/abs/2310.05339>, 2023

Sep 2022  
*On the Convexity of General Inverse  $\sigma_k$  Equations*  
**Journal of Functional Analysis**, 2023  
<https://arxiv.org/abs/2209.11370>

Jan 2022  
*The deformed Hermitian–Yang–Mills Equation, the Positivstellensatz, and the Solvability*  
**Advances in Mathematics**, 2023  
<https://arxiv.org/abs/2201.01438>

Dec 2020  
*Deformed Hermitian–Yang–Mills equation on Compact Hermitian Manifolds*  
**Mathematical Research Letters**, [accepted](#) (2022)  
<https://arxiv.org/abs/2012.00487>

## Workshop and Conference Talks

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- I July 2024  
Geometry Crossing Singularities  
TIMS 2024 Summer Program in Geometry  
<https://www.tims.ntu.edu.tw/modules/news/article.php?storyid=3972>
  - I May 2024  
Recent Advances in Differential Geometry  
American Mathematical Society Spring Western Sectional Meeting  
[https://www.ams.org/meetings/sectional/2299\\_program.html](https://www.ams.org/meetings/sectional/2299_program.html)  
[https://www.ams.org/meetings/sectional/2299\\_program\\_ss15.html#title](https://www.ams.org/meetings/sectional/2299_program_ss15.html#title)
  - I Dec 2023  
Geometric Analysis Session  
Canadian Mathematical Society Winter Meeting  
<https://www.winter23.cms.math.ca>  
[https://www2.cms.math.ca/Events/winter23/sessions\\_scientific#ga](https://www2.cms.math.ca/Events/winter23/sessions_scientific#ga)
  - I Jul 2023  
Recent Progress in special Lagrangian Equations and deformed Hermitian–Yang–Mills Equation  
National Center for Theoretical Sciences  
[https://ncts.ntu.edu.tw/events\\_2\\_detail.php?nid=404&fbclid=IwAR3G7E03LkoHbTDJ0vANOzckpibCvn8ZU0s237Gkmwypyv8jEbwoTLPkwwM](https://ncts.ntu.edu.tw/events_2_detail.php?nid=404&fbclid=IwAR3G7E03LkoHbTDJ0vANOzckpibCvn8ZU0s237Gkmwypyv8jEbwoTLPkwwM)
  - I Dec 2021  
Recent Developments in Complex Geometry and Geometric Analysis  
Canadian Mathematical Society Winter Meeting  
<https://www2.cms.math.ca/Events/winter21/abs/rdc#cml>

## Invited Seminar Talks

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- I Oct 2024  
Any Complex Geometry Seminar  
University of California, Berkeley

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- Oct 2024

Geometry, Topology, and Analysis Seminar

Wichita State University

<https://sites.google.com/site/wsugeometrytopologyseminar/>
  - May 2024, Jan 2023

Joint Geometric Analysis Seminar

Chinese University of Hong Kong

<https://www.math.cuhk.edu.hk/seminars/convexity-general-inverse-k-equations-and-some-applications>
  - May 2024, Jan 2024, Dec 2022, Nov 2022, Mar 2021, Dec 2018, Apr 2017

NCTS Differential Geometry Seminar

National Center for Theoretical Sciences

[https://ncts.ntu.edu.tw/events\\_3\\_detail.php?nid=339](https://ncts.ntu.edu.tw/events_3_detail.php?nid=339)

[https://ncts.ntu.edu.tw/events\\_1\\_detail.php?nid=2389](https://ncts.ntu.edu.tw/events_1_detail.php?nid=2389)

[https://ncts.ntu.edu.tw/events\\_1\\_detail.php?nid=2367](https://ncts.ntu.edu.tw/events_1_detail.php?nid=2367)

[https://ncts.ntu.edu.tw/events\\_1\\_detail.php?nid=1917](https://ncts.ntu.edu.tw/events_1_detail.php?nid=1917)

[https://www.math.sinica.edu.tw/www/seminar/abstract\\_view.jsp?seminar\\_id=2689](https://www.math.sinica.edu.tw/www/seminar/abstract_view.jsp?seminar_id=2689)

[https://140.112.36.108/events\\_1\\_detail.php?nid=889](https://140.112.36.108/events_1_detail.php?nid=889)
  - Apr 2024

Geometry/Topology Seminar

University of California, Davis

<https://www.math.ucdavis.edu/research/seminars?type=5&when=future>
  - Apr 2024

Geometry and Physics Seminar

Boston University

<https://math.bu.edu/research/geom/seminar.html>
  - Mar 2024

Informal Geometric Analysis Seminar

Northwestern University

[https://math.northwestern.edu/news/calendar/display\\_cal\\_by\\_quarter.cgi?seminar=Informal+Geometric+Analysis+Seminar&dyear=2024&dquarter=1](https://math.northwestern.edu/news/calendar/display_cal_by_quarter.cgi?seminar=Informal+Geometric+Analysis+Seminar&dyear=2024&dquarter=1)

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- I Mar 2024  
Geometry and Geometric Analysis Seminar  
Purdue University  
<https://sites.google.com/view/purdue-gga>
  - I Feb 2024  
Analysis Seminar  
Columbia University  
<https://www.math.columbia.edu/~egiorgi/seminar-ga.html>
  - I I Nov 2023, Mar 2022  
Geometric Analysis Seminar  
Beijing International Center for Mathematical Research  
<https://bicmr.pku.edu.cn/content/show/43-3146.html>  
<https://bicmr.pku.edu.cn/content/show/43-2663.html>  
<https://www.math.pku.edu.cn/teachers/jjanchunchu/seminar.html>
  - I May 2023  
Differential Geometry Seminar  
Ohio State University  
<https://math.osu.edu/events/convexity-general-inverse-sigmak-equations-and-some-applications>
  - I April 2023  
UCR Geometry-Topology seminar  
University of California, Riverside  
<https://sites.google.com/view/brian-collier/ucr-geometry-topology-seminar>
  - I Feb 2023  
Algebraic Geometry in String Theory Seminar  
Center of Mathematical Sciences and Applications at Harvard University  
<https://cmsa.fas.harvard.edu/event/agst-22423/>
  - I Feb 2023  
Informal Complex Geometry and PDE Seminar  
Columbia University  
<http://math.columbia.edu/~kjs/seminar>
  - I Apr 2022  
The Mathematics Colloquium at Rutgers-Newark

Rutgers University

<https://sites.rutgers.edu/chen-wan/colloquium/>

- I Feb 2022  
Geometry and Topology Seminar  
McMaster University  
[https://www.math.mcmaster.ca/news-events/events/g-1-4r0bt9198d8j7q501kob4lbt5v\\_202202032030.html](https://www.math.mcmaster.ca/news-events/events/g-1-4r0bt9198d8j7q501kob4lbt5v_202202032030.html)
- I Oct 2021  
Differential Geometry Seminar  
University of California, Irvine  
<https://www.math.uci.edu/node/37181>
- II Apr 2021, Dec 2020  
NCTS Postdoc Seminar on Differential Geometry  
National Center for Theoretical Sciences

## Teaching Experience

### Lecturer

- I Autumn 2024  
Math 2174 Linear Algebra and Differential Equations for Engineers  
(2 sections, 60 & 60 enrollments)
- I Spring 2024  
Math 1131 Calculus for Business (2 sections, 140 & 210 enrollments; mentor 2 & 3 TAs)
- I Autumn 2023  
Math 1131 Calculus for Business (280 enrollments; mentor 4 TAs)
- I Summer II 2022  
Math 3A Introduction to Linear Algebra (60 students; mentor 1 TA)

### Teaching Assistant

- I Spring 2023  
Math 2A Calculus
- II Winter 2019, Summer II 2018  
Math 2B Calculus
- I I Summer I 2021, Fall 2019

_____ IIII _____	Math 3A Introduction to Linear Algebra Winter 2020, Summer I 2020, Summer I 2019, Spring 2019, and Fall 2018 Math 3D Elementary Differential Equations
_____ II _____	Spring 2022, Fall 2021 Math 5A Calculus for Life Sciences
_____ I _____	Fall 2020 Math 5B BioCalculus
_____ II _____	Fall 2020, Fall 2019 Math 118 Theory of Differential Equations
_____ II _____	Winter 2022, Spring 2021, Winter 2021 Math 134B Financial Derivatives
_____ I I _____	Spring 2023, Spring 2021 Math 134C Financial Models
_____ I I _____	Summer I 2022, Summer I 2020 Math 175 Combinatorics
_____ I _____	Spring 2020 Math 205C Introduction to Graduate Analysis

## Honors and Awards

_____ I _____	Jan 2025 ICCM Best Thesis Award, Gold Medal
_____ I _____	July 2024 AMS-Simons Travel Grants
_____ I _____	Spring 2021 Von Neumann Outstanding Performance as a Graduate Student Award
_____ I _____	Spring 2016 Phi Tau Phi Scholastic Honor
_____ I _____	Fall 2015 Excellent TA Award Tsai Wang-Lin Scholarship Hu Dun-Fu Scholarship

\_\_\_\_\_ Fall 2011  
High GPA Award  
Li Bung-Fung Scholarship

## Misc Experience

\_\_\_\_\_ June 2018–April 2023  
Treasurer of Taiwanese Graduate Student Association  
University of California, Irvine

Last updated: November 01, 2024.