

# 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

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*  
<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>

## Conference Talks

Dec 2023  
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)

Dec 2023  
Geometric Analysis Session  
Canadian Mathematical Society Winter Meeting  
<https://www.winter23.cms.math.ca>

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=IwAR3G7E03LkoHbTDJ0vANOzckpibCvn8ZU0s237Gkmwypyv8jEbwoTLPkvwM](https://ncts.ntu.edu.tw/events_2_detail.php?nid=404&fbclid=IwAR3G7E03LkoHbTDJ0vANOzckpibCvn8ZU0s237Gkmwypyv8jEbwoTLPkvwM)

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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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May 2023

Differential Geometry Seminar

Ohio State University

<https://math.osu.edu/events/convexity-general-inverse-sigmak-equations-and-some-applications>

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April 2023

UCR Geometry-Topology seminar

University of California, Riverside

<https://sites.google.com/view/brian-collier/ucr-geometry-topology-seminar>

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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/>

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Feb 2023

Informal Complex Geometry and PDE Seminar

Columbia University

<http://math.columbia.edu/~kjs/seminar>

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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>

I	<p>Apr 2022</p> <p>The Mathematics Colloquium at Rutgers-Newark</p> <p>Rutgers University</p> <p><a href="https://sites.rutgers.edu/chen-wan/colloquium/">https://sites.rutgers.edu/chen-wan/colloquium/</a></p>
I	<p>Mar 2022</p> <p>Geometric Analysis Seminar</p> <p>Beijing International Center for Mathematical Research</p> <p><a href="https://bicmr.pku.edu.cn/content/show/43-2663.html">https://bicmr.pku.edu.cn/content/show/43-2663.html</a></p> <p><a href="https://www.math.pku.edu.cn/teachers/jianchunchu/seminar.html">https://www.math.pku.edu.cn/teachers/jianchunchu/seminar.html</a></p>
I	<p>Feb 2022</p> <p>Geometry and Topology Seminar</p> <p>McMaster University</p> <p><a href="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</a></p>
I	<p>Oct 2021</p> <p>Differential Geometry Seminar</p> <p>University of California, Irvine</p> <p><a href="https://www.math.uci.edu/node/37181">https://www.math.uci.edu/node/37181</a></p>
I I I I	<p>Dec 2022, Nov 2022, Mar 2021, Dec 2018, Apr 2017</p> <p>NCTS Differential Geometry Seminar</p> <p>National Center for Theoretical Sciences</p> <p><a href="https://ncts.ntu.edu.tw/events_1_detail.php?nid=2389">https://ncts.ntu.edu.tw/events_1_detail.php?nid=2389</a></p> <p><a href="https://ncts.ntu.edu.tw/events_1_detail.php?nid=2367">https://ncts.ntu.edu.tw/events_1_detail.php?nid=2367</a></p> <p><a href="https://ncts.ntu.edu.tw/events_1_detail.php?nid=1917">https://ncts.ntu.edu.tw/events_1_detail.php?nid=1917</a></p> <p><a href="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</a></p> <p><a href="https://140.112.36.108/events_1_detail.php?nid=889">https://140.112.36.108/events_1_detail.php?nid=889</a></p>
II	<p>Apr 2021, Dec 2020</p> <p>NCTS Postdoc Seminar on Differential Geometry</p> <p>National Center for Theoretical Sciences</p>

## Teaching Experience

### Lecturer

I	<p>Autumn 2023</p> <p>Math 1131 Calculus for Business</p>
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_____ I	Summer II 2022 Math 3A Introduction to Linear Algebra
<b>Teaching Assistant</b>	
_____ I	Spring 2023 Math 2A Calculus
_____ II	Winter 2019, Summer II 2018 Math 2B Calculus
_____ I I	Summer I 2021, Fall 2019 Math 3A Introduction to Linear Algebra
_____ IIII	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
_____ I I	Fall 2020, Fall 2019 Math 118 Theory of Differential Equations
_____ II I	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	Spring 2021 Von Neumann Outstanding Performance as a Graduate Student Award
_____ I	Spring 2016 Phi Tau Phi Scholastic Honor

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Fall 2015  
Excellent TA Award  
Tsai Wang-Lin Scholarship  
Hu Dun-Fu Scholarship

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Fall 2011  
High GPA Award  
Li Bung-Fung Scholarship

## Misc Experience

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

Last updated: September 10, 2023.