

## Yi-Li Wu

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### CONTACT INFORMATION

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### EDUCATION

#### University of California, Santa Barbara, CA

Ph.D. Mathematics, Sept. 2023-present

#### National Taiwan University, Taipei, Taiwan

B.S. Mathematics, June 2022

- GPA: 4.0/4.3

### RESEARCH EXPERIENCE

#### National Taiwan University

Independent study on topics of Number Theory

Sept. 2021 - June 2023

- Advisor: Prof. Ming-Lun Hsieh (NTU)
- Description:

Weekly meeting with Prof. Hsieh on subjects related to number theory, including algebraic geometry, classical algebraic number theory, automorphic forms, and representation theory.

#### National Center of Theoretical Sciences

Undergraduate Summer Research Program

July-August 2022

- Advisors:  
Prof. Jungkai Alfred Chen (NTU/NCTS)  
Prof. Ching-Jui Lai (NCKU)  
Prof. Jheng-Jie Chen (NCU)
- Topics: Toric varieties and weighted projective spaces.

#### University of California, Santa Barbara

Ongoing thesis

- Advisor: Prof. Francesc Castella (UCSB)
- Abstract: Let  $E$  be an elliptic curve defined over  $\mathbb{Q}$  with good ordinary reduction at a prime  $p > 3$  and the order of  $L(E, s)$  at  $s = 1$  at least 2. Darmon and Rotger constructed a Selmer class  $\kappa_p$  and conjectured that its nonvanishing is equivalent to the  $\mathbb{Q}_p$ -dimension of the Selmer group being 2. In 2018, Francesc Castella and Ming-Lun Hsieh proved a special case of Darmon-Rotger's conjecture. The ongoing project is to prove an analogous result when  $E$  has good supersingular reduction at  $p$ .

### TEACHING EXPERIENCE

#### Teaching assistant(NTU)

Linear Algebra

Sept. 2022 - June 2023

#### Teaching Assistant(UCSB)

	MATH3A (Calculus with application)	Fall 2023
	MATH34A (Calculus for social science and life science)	Winter 2024
	MATH34B (Calculus for social science and life science)	Winter 2024
	MATH34B (Calculus for social science and life science)	Spring 2024
	MATH34B (Calculus for social science and life science)	Fall 2024
	MATH 3A (Calculus with application)	Winter 2025
	MATH 3A (Calculus with application)	Spring 2025
CONFERENCE ATTENDED	Arizona Winter School (study group under Jessica Fintzen)	March 2025
	Automorphic Forms Workshop	May 2025
HONORS	Chow Hung-Ching Scholarship, Academic Sinica, Taipei, Taiwan	2021
	Academic Achievement Award, Department of Mathematics, NTU, Taipei, Taiwan	2021
	Dean's Award, College of Science, NTU, Taipei, Taiwan	2022
REFERENCES	<b>Prof. Francesc Castella</b> , Associate Professor University of California, Santa Barbara <b>castella@ucsb.edu</b>	
PERSONAL	Birthdate: August 5th, 1999 Languages: Mandarin(native), Taiwanese (native), English (fluent) Taiwanese citizen	