## EMAIL

## chrislpkuo@berkeley.edu

#### Interest

- Microlocal Sheaf Theory
- D-modules
- Symplectic and Contact Geometry
- Noncommutative Geometry
- Geometric Representation Theory
- Mirror Symmetry

## EDUCATION AND TRAINING

• Ph.D. in Mathematics, UC Berkeley, 2016-2022.

constructed by Coisotropic Luttinger Surgery

Advisor: Vivek Shende.

Thesis title: Symplectic geometric methods in microlocal sheaf theory.

B.S. in Mathematics, National Taiwan University, Taipei, Taiwan 2010-2014.
Advisor: Chung-Jun Tsai.
Tthesis title: A calculation for the Hard Lefschetz map on six-manifolds

#### APPOINTMENTS

- Postdoc for Noncommutative Algebraic Geometry, SLMath, Spring 2024.
- Assistant Professor (RTPC) of Mathematics, University of Southern California, Fall 2022 Present (on leave during Spring 2024).
  - Herbert and Ruth Busemann Assistant Professor in Mathematics, Fall 2023 – Spring 2024.

### Research

- Tomohiro Asano, Yuichi Ike, C. Kuo, and Wenyuan Li, Sheaf quantization of symplectic isotopies, in preparation.
- Sheel Ganatra, C. Kuo, Wenyuan Li, and Haosen Wu, Integral transforms and compactness, in preparation.
- C. Kuo and Harold Williams, Tropical Lagrangian coamoebae and free resolutions, arXiv:2412.18071.
- C. Kuo and Wenyuan Li, Relative Calabi-Yau structure on microlocalization. arXiv:2408.04085, submitted to Duke in December 2024.
- C. Kuo and Wenyuan Li, Duality, Künneth formulae, and integral transforms in microlocal geometry. arXiv:2405.15211, submitted to IMRN in June 2024.
- Laurent Côté, C. Kuo, David Nadler, and Vivek Shende, The microlocal Riemann-Hilbert correspondence for complex contact manifolds. arXiv:2406.16222.
- C.Kuo, Vivek Shende and Bingyu Zhang. On the Hochschild cohomology of Tamarkin categories. arXiv:2312.11447.
- C. Kuo and Wenyuan Li, Spherical adjunction and Serre functor from microlocalization, arXiv:2210.06643, submitted to Advances in October 2024.
- Laurent Côté, C. Kuo, David Nadler, and Vivek Shende, Perverse Microsheaves. arXiv:2209.12998, submitted to Compositio in November 2024.
- C. Kuo, Wrapped sheaves, Adv. Math 415 (2023): 108882.

# PH.D. STUDENTS SUPERVISED

• Haosen Wu, current, co-supervised with Wenyuan Li under Sheel Ganatra.

## TEACHING EXPERIENCE

- Instructor, Math 425A, Fundamental Concepts of Analysis, University of Southern California, Spring 2025
- Instructor, Math 125, Calculus I, University of Southern California, Spring 2025
- Instructor, Math 425A, Fundamental Concepts of Analysis, University of Southern California, Fall 2024
- Instructor, Math 144, Foundations of Statistics, University of Southern California, Fall 2023
- Instructor, Math 245, Mathematics of Physics & Engineering I, University of Southern California, Spring 2023
- Instructor, Math 125g, Calculus I, University of Southern California, Fall 2022
- Graduate Student Instructor, Math 110 Linear Algebra, UC Berkeley, Spring 2020
- Graduate Student Instructor, Math 16B Analytic Geometry and Calculus, UC Berkeley, Spring 2019
- Graduate Student Instructor, Math 54 Linear Algebra and Differential Equations, UC Berkeley, Fall 2017 and Fall 2018
- Graduate Student Instructor, Math 53 Multivariable Calculus, UC Berkeley, Spring 2017
- Graduate Student Instructor, Math 1A Calculus, UC Berkeley, Fall 2016
- Teaching Assistant, Geometry (Required course for juniors), National Taiwan University, Fall 2013

### Seminars

- Co-organizer, Topology seminar, University of Southern California, Fall 2022-24
- Organizer, Deformation quantization modules learning seminar, Syddansk Universitet, Fall 2021-Spring 2022

### INVITED TALKS

- Symplectic Geometry and Sheaves, Geometry and Topology Seminar, UC Irvine, November 2024.
- A quick introduction of microlocal sheaf theory, NAG GRT Seminar, SLMath (formly MSRI), February 2024.
- Globalizing the microlocal Riemann-Hilbert correspondence, Algebraic Geometry Seminar, UC Davis, January 2024.
- Globalizing the microlocal Riemann-Hilbert correspondence, Algebraic Geometry Seminar, Academia Sinica, January 2024.
- Globalizing the microlocal Riemann-Hilbert correspondence, Geometry Seminar, Kyushu University, January 2024.
- Microlocal Riemann-Hilbert correspondence, QM Research Seminar, University of Southern Denmark, December 2023.
- Microlocal Riemann-Hilbert correspondence, Bonn symplectic geometry seminar, December 2023.
- Perverse Microsheaves, Mathematics Seminars, Montana State University, October 2023.
- Perverse Microsheaves, Differential geometry and symplectic topology seminar, University of Minnesota, September 2023.
- Sheaf Theoretic Methods in Symplectic Geometry, NCTS Differential Ge-

- ometry Seminar, National Center for Theoretical Sciences, Taipei City, May 2023.
- Microlocal sheaf theory in noncommutative geometry, Algebraic Geometry Seminar, Academia Sinica, Taipei City, May 2023.
- Microlocal sheaf theory in noncommutative geometry, UCSB Seminar on Geometry and Arithmetic, University of California, Santa Barbara, May 2023.
- Wrapped sheaves, Topology Seminar in USC, September 2022
- Wrapped sheaves, QM Research Seminar in SDU, March 2022
- Wrapped sheaves, U. Iowa Topology Seminar, December 2021

## Seminar and Talks

- Sheaf quantization and the topology of cotangent bundles, Guest lecture for MATH 699 by Sheel Ganatra, Fall 2022.
- Nondisplaceability results for Lagrangians in toric symplectic manifolds, Southern California Symplectothon, October 2022
- Hochschild homology, Deformation quantization modules learning seminar, Syddansk Universitet, February 2022
- Kernels, Deformation quantization modules learning seminar, Syddansk Universitet, December 2021
- Algebroids, Deformation quantization modules learning seminar, Syddansk Universitet, November 2021
- Nonlinear regularity and local existence, J-Holomorphic curves learning seminar, Syddansk Universitet, October 2021
- Deformation of a sheaf of rings, Deformation quantization modules learning seminar, Syddansk Universitet, October 2021
- $E_n$ -algebras and iterated loop spaces, Geometric Representation Theory seminar, UC Berkeley, Spring 2020
- Speaker, Wrapped Floer Homology Learning Seminar, Fall 2019
- Hochschild-Kostant-Rosenberg theorem through loop spaces, Geometric Representation Theory seminar, UC Berkeley, November 27 and December 14 2018
- Koszul duality for algebras, Deformation Theory Seminar, UC Berkeley, October 15 2017
- Gerbes. Mayer-Vietoris calculations, K-theory Seminar, UC Berkeley, April 2017
- Adams operation, K-theory Seminar, UC Berkeley, February 2017
- Winter Camp for Fundamentals in Mathematics for College Students, National Taiwan University, January 23-February 8, 2013

## Professional Service

- Topology Screening Exam Committee, University of Southern California, Fall 2024.
- Referee for Compositio
- Co-organizer, The Los Angeles Workshop on Representations and Geometry (LAWRGe), Summer 2023
- Referee for Annals of Mathematics

## Awards and Honors

• Shing-Tung Yau College Student Mathematics Contest, Bronze medal in geometry and topology, 2014

- $\bullet$  Honors Program in Mathematics, National Taiwan University, 2014
- $\bullet$  Chow Hung-Ching Scholarship, Institute of Mathematics Academia Sinica, 2013