Wenyuan Li

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KAP 424A, 3620 S. Vermont Ave, Los Angeles, CA, U.S.

Education

Department of Mathematics, Northwestern University *09/2018-06/2023*
Ph.D. in Mathematics
Advisor: Prof. Emmy Murphy & Prof. Eric Zaslow.
Thesis: Some functoriality results on microlocal sheaves over Legendrians and Lagrangians.

Department of Mathematics, Princeton University *09/2021-06/2022*
Visiting graduate student

Department of Mathematics, Peking University *09/2015-07/2018*
B.A. in Mathematics
Advisor: Prof. Huijun Fan,
Undergraduate thesis: Geometry of Lagrangian submanifolds in symplectic manifolds.
Department of Psychology, Peking University *09/2014-09/2015*

Employment

Department of Mathematics, University of Southern California *08/2023-05/2026*
Assistant Professor (RTPC) in Mathematics

Research Interest

Symplectic topology, contact topology, microlocal sheaf theory, and their connections to noncommutative geoemtry, mirror symmetry, cluster algebras and persistence modules.

Awards and Grants

AMS-Simons Travel Grant *2024–2025*

Papers and Preprints

Lagrangian cobordism and shadow distance in Tamarkin category,
joint with Tomohiro Asano and Yuichi Ike, to appear in ***Sel. Math. New Ser.***,
arXiv:2312.14429.

Lagrangian cobordism functor in microlocal sheaf theory II,
to appear in ***J. Sympl. Geom.***, arXiv:2308.05089.

Existence of generating families on Lagrangian cobordisms,
Math. Ann. 390 (2024), no. 4, 5471–5494, arXiv:2308.05727.

Lagrangian cobordism functor in microlocal sheaf theory I,
J. Topol. 16.3 (2023): 1113-1166, arXiv:2108.10914.

Positive microlocal holonomies and globally regular,
joint with Roger Casals, arXiv:2409.07435.

Relative Calabi-Yau structure on microlocalization,
joint with Christopher Kuo, arXiv:2408.04085.

Duality, Künneth formulae and integral transforms in microlocal geometry,
joint with Christopher Kuo, arXiv:2405.15211.

Spherical adjunction and Serre functor from microlocalization,

joint with Christopher Kuo, arXiv:2210.06643.

Conjugate fillings and Legendrian weaves,
joint with Roger Casals, arXiv:2210.02039.

Estimating Reeb chords using microlocal sheaf theory,
arXiv:2106.04079.

RESEARCH TALKS

AMS Southern Sectional Meeting, Invariants in Geometric Topology: Low Dimensions and Beyond (short talk)
Global regular functions on the moduli of Lagrangian fillings   *Mar 08–09, 2025*

2024 Annual International Congress of Chinese Mathematicians
Structural results for microlocal sheaves in symplectic geometry   *Jan 03, 2025*

1st Cross-strait Symplectic Geometry Conference, USTC
Lagrangian cobordisms and microlocal sheaf theory   *Dec 28, 2024*

Center for Quantum Mathematics Seminar, University of Southern Denmark
Relative Calabi-Yau structures for microlocal sheaves   *Dec 17, 2024*

AMS Western Sectional Meeting, Non-commutative algebras in representation theory and topology (short talk)
Relative Calabi-Yau structures for microlocal sheaves   *Oct 26, 2024*

Shanghai Jiao Tong University Topology Seminar
Structural results of microlocal sheaf categories for Legendrians   *Jul 16, 2024*

China Academy of Science AMSS Topology Seminar
Relative Calabi-Yau structures for microlocal sheaves/Fukaya categories   *Jul 10, 2024*

UC Riverside Geometry & Topology Seminar
Relative Calabi-Yau structures for microlocal sheaves/Fukaya categories   *May 10, 2024*

UC Davis Algebraic Geometry Seminar
Relative Calabi-Yau structures for microlocal sheaves   *Mar 13, 2024*

Stanford Symplectic Geometry Seminar
Generating families on Lagrangian cobordisms   *Mar 11, 2024*

Duke Geometry & Topology Seminar
Structural results of microlocal sheaf categories for Legendrians   *Feb 19, 2024*

15th International Symposium of Natural Sciences, INU (online)
Generating families on Lagrangian cobordisms   *Oct 30, 2023*

Claremont Topology Seminar
Generating families on Lagrangian cobordisms   *Oct 24, 2023*

LSU Geometry & Topology Seminar
Conjugate fillings and Legendrian weaves   *Oct 11, 2023*

Caltech/USC Algebra & Geometry Seminar
Lagrangian cobordism functor in microlocal sheaf theory   *Oct 05, 2023*

USC Geometry & Topology Seminar
Lagrangian cobordism functor in microlocal sheaf theory   *Aug 21, 2023*

Peking University Algebra & Geometry Mini Forum
Duality and spherical adjunction from microlocalization   *Aug 01, 2023*

Georgia Topology Conference 2023
Lightning talk - Conjugate fillings and Legendrian weaves   *May 25, 2023*

Tianjin University Geometry & Topology Seminar (online)
Conjugate fillings and Legendrian weaves   *Dec 16, 2022*

2nd Global Youth Forum of IGP, USTC (online)
Lagrangian cobordism functor in sheaf theory   *Dec 14, 2022*

Boston College Geometry & Topology Seminar
Conjugate fillings and Legendrian weaves   *Dec 01, 2022*

Northwestern Geometry & Physics Seminar
Duality and spherical adjunction for microlocal sheaves   *Nov 03, 2022*

Columbia Symplectic Geometry, Gauge Theory & Categorification Seminar
Duality and spherical adjunction for microlocal sheaves   *Oct 14, 2022*

UIUC Symplectic & Poisson Geometry Seminar
Conjugate fillings and Legendrian weaves   *Oct 03, 2022*

Uppsala Symplectic Geometry Seminar (online)
Lagrangian cobordism functor in sheaf theory   *Sep 29, 2022*

Michigan State University Geometry & Topology Seminar
Lagrangian cobordism functor in microlocal sheaf theory   *Mar 01, 2022*

Symplectic Zoominar (CRM-Montréal, Princeton/IAS, Tel Aviv, and Paris)
Short talk - Estimating Reeb chords using microlocal sheaf theory   *Dec 17, 2021*

Expository Talks

Legendrian Contact Homology Learning Seminar organized by Roman Krutowski
Lagrangian cobordism functor in microlocal sheaf theory   *Nov 17, 2023*

Graduate Student Seminar at Northwestern University
Families of functions and Lagrangian submanifolds   *May 12, 2023*

Symplectic 'N' Contact Topology Early Career Workshop
Exotic Weinstein structure with many closed Lagrangians   *Aug 09, 2022*

Virtual Kylerec Student Seminar 2021
An introduction to loose Legendrians in high dimensions   *Jun 15, 2021*

Graduate Student Seminar at Northwestern University
Meromorphic differential equations and Riemann-Hilbert correspondence *Feb 19, 2021*

Graduate Student Seminar at Northwestern University
Does symplectic topology of T^*M remember the smooth topology of M? *Nov 13, 2020*

Graduate Student Seminar at Northwestern University
Asymptotically flat symplectic manifolds   *Apr 19, 2019*

Mirror Symmetry Seminar organized by Professor Huijun Fan & Professor Bo Dai
Keating's Lagrangian tori in four-dimensional Milnor fibers
Lagrangian surgery and computations of Maslov index   *Oct, 2017*

Teaching Experience

MATH 535a, Differential geometry, instructor	*Spring 2025*
MATH 225, Differential equations and linear algebra, instructor	*Fall 2024*
MATH 126g, Calculus II, instructor	*Spring 2024*
MATH 126g, Calculus II, instructor	*Fall 2023*
GRE Math Sub preparation, Causeway Postbaccalaureate Certificate Program, instructor	*Summer 2022*
MATH 300-BR, Foundations of higher mathematics, TA	*Summer 2022*
MATH 290-3, MENU Linear algebra and multivariable calculus III, TA	*Spring 2021*
MATH 330-3, Abstract algebra III, TA	*Spring 2021*
MATH 290-2, MENU Linear algebra and multivariable calculus II, TA	*Winter 2021*
MATH 330-2, Abstract algebra II, TA	*Winter 2021*
MATH 290-1, MENU Linear algebra and multivariable calculus I, TA	*Fall 2020*
MATH 330-1, Abstract algebra I, TA	*Fall 2020*
MATH 230-1, Multi variable differential calculus, TA	*Spring 2020*
MATH 230-1, Multi variable differential calculus, TA	*Winter 2020*
MATH 220-1, Single variable differential calculus, TA	*Fall 2019*

SERVICE AND OUTREACH

Coorganizer of AMS Special Session on Symplectic Geometry and Dynamics,	*Spring 2025*
Coorganizer of AMS Special Session on Geometry and Topology of Contact and Symplectic Manifolds,	*Fall 2024*
Coorganizer of Los Angeles Workshop on Representation and Geometry,	*Summer 2024*
Coorganizer of Caltech/USC joint Algebra & Geometry Seminar,	*Fall 2024–*
Coorganizer of USC Geometry & Topology Seminar,	*Fall 2023–*
AWM mentoring program,	*Fall 2024–*
Northwestern Association for Women in Mathematics mentoring program,	*Spring 2021*
UCLA Math Circle Advanced III,	*Fall 2024–*
Directed reading program at Northwestern University,	*Spring 2023*
Directed reading program at Northwestern University,	*Spring 2021*
Northwestern Putnam training sessions,	*Fall 2019*
Northwestern Putnam training sessions,	*Fall 2018*

Referee for *Pacific Journal of Mathematics*
Reviewer for ZbMATH Open