

Yi-Ting Hsu

CONTACT INFORMATION	Physics Department, University of Notre Dame 312 Nieuwland Science Hall Notre Dame, IN, 46368, USA	e-mail: yhsu2@nd.edu
PROFESSIONAL EXPERIENCE	Physics Department , University of Notre Dame, IN <i>Assistant Professor</i>	2020 –
	Condensed Matter Theory Center , University of Maryland, MD <i>Postdoctoral Research Associate</i>	2017 – 2020
EDUCATION	Cornell University , Ithaca, New York <i>Doctor of Philosophy</i>	May 2017
	Thesis title: Topological Phases in the Real World Advisor: Eun-Ah Kim	
	National Tsing-Hua University , Hsinchu, Taiwan <i>Bachelor of Science</i>	May 2009
RESEARCH INTERESTS	Theoretical Condensed Matter Physics	
HONOR AND AWARDS	NSF CAREER Award (2023 - 2028)	
SELECTED PUBLICATIONS	“Topological superconductivity in three-dimensional centrosymmetric MoTe₂” S.-J. Huang, K. Park, Y.-T. Hsu, arXiv:2212.06197 (2022).	
	“Non-Hermitian skin effects on many-body localized and thermal phases” Y.-C. Wang, K. Suthar, H.-H. Jen, Y.-T. Hsu, J.-S. You, arXiv:2210.12998 (2022).	
	“Observation of coexisting weak localization and superconducting fluctuations in strained Sn_{1-x}In_xTe thin films” J. Wang, W. Powers, Z. Zhang, M. Smith, B. J. McIntosh, S.-K. Bac, L. Riney, M. Zhukovskyi, T. Orlova, L. P. Rokhinson, Y.-T. Hsu, X. Liu, B. A. Assaf, Nano Lett. 22 792-800 (2022).	
	“Boundary-diagnosing topological invariants beyond symmetry indicators: A case study of two-fold rotational symmetric superconductors” Y. Chen, S.-J. Huang, Y.-T. Hsu, T.-C. Wei, Phys. Rev. B 105 , 094518 (2022).	
	“Spin-valley locked instabilities in moiré transition metal dichalcogenides with conventional and higher-order Van Hove singularities” Y.-T. Hsu, F. Wu, S. Das Sarma, Phys. Rev. B 104 , 195134 (2021).	
	“Faithful derivation of symmetry indicators: A case study for topological superconductors with time-reversal and inversion symmetries” S.-J. Huang and Y.-T. Hsu, Phys. Rev. Research 3 , 013243 (2021)	
	“Topological superconductivity, ferromagnetism, and valley-polarized phases in moiré systems: Renormalization group analysis for twisted double bilayer graphene” Y.-T. Hsu, F. Wu, S. Das Sarma, Phys. Rev. B 102 , 085103 (2020). Editor’s suggestion.	
	“Higher-Order Topological Dirac Superconductors” R.-X. Zhang, Y.-T. Hsu, S. Das Sarma, Phys. Rev. B 102 , 094503 (2020)	
	“Inversion-protected topological crystalline superconductivity in monolayer WTe₂” Y.-T. Hsu, W. S. Cole, R.-X. Zhang, J. D. Sau, Phys. Rev. Lett. 125 , 097001 (2020)	

“Butterfly effect in interacting Aubry-Andre model: Thermalization, slow scrambling, and many-body localization”

S. Xu, X. Li, Y.-T. Hsu, B. Swingle, S. Das Sarma, Phys. Rev. Research **1**, 032039 (2019)

“Machine learning many-body localization: Search for the elusive nonergodic metal”

Y.-T. Hsu, X. Li, D.-L. Deng, S. Das Sarma, Phys. Rev. Lett. **121**, 245701 (2018)

“Hybridization-induced interface states in a topological insulator-magnetic metal heterostructure”

Y.-T. Hsu, K. Park, E.-A. Kim, Phys. Rev. B **96**, 235433 (2017)

“Band-structure-dependence of renormalization-group prediction on pairing channels”

Y.-T. Hsu, A. F. Rebola, C. J. Fennie, E.-A. Kim, arXiv:1701.07884 (2017)

“Topological superconductivity in monolayer transition metal dichalcogenides”

Y.-T. Hsu, A. Vaezi, M. H. Fischer, E.-A. Kim, Nat. Comm. **8**, 14985 (2017)

“Manipulating superconductivity in ruthenates through Fermi surface engineering”

Y.-T. Hsu, W. Cho, A. F. Rebola, B. Burganov, C. Adamo, K. M. Shen, D. G. Schlom, C. J. Fennie, E.-A. Kim, Phys. Rev. B **94**, 045118 (2016)

“Effects of surface-bulk hybridization in three-dimensional topological metals”

Y.-T. Hsu, M. H. Fischer, T. L. Hughes, K. Park, E.-A. Kim, Phys. Rev. B **89**, 205438 (2014)

“Field-induced long-lived supermolecules”

S.-J. Huang, Y.-T. Hsu, H. Lee, Y.-C. Chen, A. G. Volosniev, N. T. Zinner, D.-W. Wang, Phys. Rev. A **85**, 055601 (2012)

“Interaction-induced ferroelectricity in the rotational states of polar molecules”

C.-H. Lin, Y.-T. Hsu, H. Lee, D.-W. Wang, Phys. Rev. A **81**, 031601(R) (2010)

SPECIAL
PUBLICATION

“Superconductivity in a graphene system survives a strong magnetic field”, Y.-T. Hsu, *Nature News & views*, 595, 495-496 (2021)

SELECTED TALKS

Invited talk, Grete Hermann Network workshop at Wurzburg, Germany (July 2023)
Seminar, U of Tennessee (April 2023)
Invited talk, AVS 68 (Nov. 2022)
Invited talk, International Conference on Complexity and Topology in Quantum Matters (Jul. 2022)
Seminar, Texas A&M (May 2022)
Seminar, Indiana University Bloomington (April 2022)
Invited talk, March meeting (March 2022)
Contributed Talk, Aspen winter conference (Jan. 2022)
Seminar, Harvard (April 2021)
Invited talk, MRS Spring Meeting (April 2021)
Seminar, Virginia Tech (Feb. 2021)
Colloquium, City University of Hong Kong (Feb. 2021)
Virtual talk, KITP (Oct. 2020)
Seminar, Leibniz Institute for Solid State and Materials Research Dresden (May 2020)
Colloquium, University of Notre Dame (Oct. 2019)
Invited talk, Perimeter Institute (Sep. 2019)
Seminar, Perimeter Institute (Sep. 2019)
Invited talk, National Center for Theoretical Sciences, Hsinchu, Taiwan (July 2019)
Invited talk, Academia Sinica, Taiwan (July 2019)
Invited talk, March meeting (Mar. 2018)
Invited talk, KITP (Aug. 2017)

RECENT
WORKSHOPS AND
CONFERENCES

Quantum Materials: Experimental Enigmas and Theoretical Challenges, Aspen summer workshop (18 June-9 July 2023)

Quantum Universe in a Crystal: Symmetry and Topology across the Correlation Spectrum, KITP (8 May-2 June 2023)

Novel Quantum States of Matter in Moire Materials, Aspen winter conference (12 Mar.-17 Mar. 2023)

2022 Correlated Electron Systems Gordon Research Conference, Mount Holyoke College (26 June-1 July 2022)

New Directions in Strong Correlation Physics: From Strange Metals to Topological Superconductivity, Aspen (23 Jan.-28 Jan. 2022)

Correlated Systems with Multicomponent Local Hilbert Spaces, KITP (28 Sep.-18 Dec. 2020)

Spin and heat transport in quantum and topological materials, KITP (4-22 Nov. 2019)

Machine-learning for Many-body Physics, KITP (28 Jan.-22 Feb. 2019)

Intertwined Order and Fluctuation in Quantum Materials, KITP (17 July-25 Aug. 2017)

Synthetic Quantum Matter, KITP (17 Oct.-10 Nov. 2016)

Topological Phases of Quantum Matter, Boulder summer school (27-29 Mar 2016)

REFeree
EXPERIENCE

Nature

Nature Communication

Asia Materials

Physics Review Letter

Physics Review X

Physics Review B

Physical Review Materials

Physica B