

CONTACT INFORMATION	Division of Physics, Mathematics and Astronomy 1200 E California Blvd, MC 149-33, Pasadena, CA 91125	lindaye@caltech.edu
HOMEPAGE	q-mat.caltech.edu	
EMPLOYMENT	California Institute of Technology , Assistant Professor of Physics Division of Physics, Mathematics and Astronomy	since 2023
	Stanford University , Marvin Chodorow Postdoctoral Fellow Department of Applied Physics, Advisor: Prof. Ian R. Fisher	2020-2023
EDUCATION	Massachusetts Institute of Technology , Ph.D., Physics Thesis: Topology and correlation in kagome lattice metals Advisor: Prof. Joseph G. Checkelsky	2014-2020
	University of Tokyo , M.Eng., Applied Physics Thesis: Quantum oscillation studies of the Rashba bands in Cu_xBiTe Advisor: Prof. Yoshinori Tokura	2012-2014
	Tsinghua University , B.Sc., Mathematics and Physics	2008-2012
AWARDS & FELLOWSHIPS	Marvin Chodorow Postdoctoral Fellow, Stanford University	2020-2023
	Martin and Beate Block Winter Award, Aspen Center for Physics	2020
	Heising-Simons Physics Research Fellow, MIT	2019
	Tsinghua Xuetang Fellow, Tsinghua University	2015-2019
	Whiteman Fellow, MIT	2014-2015
	MEXT Scholarship, Japan Ministry of Education, Science and Technology	2012-2014
	Tsinghua Xuetang Talent Program, Tsinghua University	2011-2012
	Tsinghua-COSL Student Achievement Award, Tsinghua University	2009
FUNDING & COLLABORATION	Co-Principal Investigator, "Support for EPiQS Postdoctoral Symposia" Gordon and Betty Moore Foundation GBMF11918	2023-2025
	Senior Investigator, "Institute for Quantum Information and Matter" NSF Physics Frontier Center PHY-2317110	2024-2026
	Senior Personnel, "Acquisition of Helium Recovery Equipment: For Time-Resolved ARPES at NSF-NeXUS", DMR-2320634	2023-2026

PREPRINTS

5. [L. Ye*](#), M. E. Sorensen*, M. D. Bachmann and I. R. Fisher, "Measurement of the magnetic octupole susceptibility of $\text{PrV}_2\text{Al}_{20}$ ", [arXiv/2309.04633](#).
4. M. P. Zic, M. S. Ikeda, P. Massat, P. M. Hollister, [L. Ye](#), E. W. Rosenberg, J. A. W. Straquadine, B. J. Ramshaw and I. R. Fisher, "Giant elastocaloric effect at low temperatures in TmVO_4 and implications for cryogenic cooling", [arXiv/2308.15577](#).
3. P. M. Neves, J. P. Wakefield, S. Fang, H. Nguyen, [L. Ye](#) and J. G. Checkelsky, "Crystal net catalog of model flat band materials", [arXiv/2303.02524](#).
2. [L. Ye*](#), J. I. Facio*, M. P. Ghimire, M. K. Chan, J.-S. You, D. C. Bell, M. Richter, J. van den Brink and J. G. Checkelsky, "Field-dependent Shubnikov-de Hass oscillations in ferromagnetic Weyl semimetal $\text{Co}_3\text{Sn}_2\text{S}_2$ ", [arXiv/2203.04254](#).
1. [L. Ye](#), S. Fang, M. Kang, J. Kaufmann, Y. Lee, C. John, P. M. Neves, C. Jozwiak, A. Bostwick, E. Rotenberg, E. Kaxiras, D. C. Bell, O. Janson, R. Comin and J. G. Checkelsky, "A flat band-induced correlated kagome metal", [arXiv/2106.10824](#).

REFEREED
PUBLICA-
TIONS

21. B. P. Belbase*, [L. Ye*](#), B. Karki, J. I. Facio, J.-S. You, J. G. Checkelsky, J. van den Brink and M. P. Ghimire, "Large anomalous Hall effect in single crystals of the kagome Weyl ferromagnet Fe_3Sn ", *Phys. Rev. B* **108**, 075164 (2023).
20. [L. Ye](#), Y. Sun, V. Sunko, M. S. Ikeda, J. F. Rodriguez-Nieva, T. Worasaran, M. D. Bachmann, M. E. Sorensen, J. Orenstein and I. R. Fisher, "Elastocaloric signatures of symmetric and antisymmetric strain-tuning of quadrupolar and magnetic phases in DyB_2C_2 ", to appear in *Proc. Natl. Acad. Sci.*, preprint see [arXiv/2211.12453](#).
19. C. Lee, Y. Sun, [L. Ye](#), S. Rathi, K. Wang, Y.-M. Lu, J. Moore, J. G. Checkelsky, J. Orenstein, "Spin wavepackets in the kagome ferromagnet Fe_3Sn_2 : propagation and precursors", *Proc. Natl. Acad. Sci.* **120**, 2220589120 (2023).
18. F. Y. Gao, Z. Zhang, [L. Ye](#), Y.-H. Cheng, Z.-J. Liu, J. G. Checkelsky, E. Baldini and K. A. Nelson, "Snapshots of a light-induced metastable hidden phase driven by the collapse of charge order", *Sci. Adv.* **8**, eabp9076 (2022).
17. S. Fang*, [L. Ye*](#), M. P. Ghimire, M. Kang, J. Liu, L. Fu, M. Richter, J. van den Brink, E. Kaxiras, R. Comin and J. G. Checkelsky, "Ferromagnetic helical nodal line and Kane-Mele spin-orbit coupling in kagome metal Fe_3Sn_2 ", *Phys. Rev. B* **105**, 035107 (2022).
16. M. Han, H. Inoue, S. Fang, C. John, [L. Ye](#), M. K. Chan, D. Graf, T. Suzuki, M. P. Ghimire, W. J. Cho, E. Kaxiras and J. G. Checkelsky, "Evidence of two-dimensional flat band at the surface of antiferromagnetic kagome metal FeSn ", *Nat. Commun.* **12**, 5345 (2021).
15. M. Kang, S. Fang, [L. Ye](#), H. C. Po, J. Denlinger, C. Jozwiak, A. Bostwick, E. Rotenberg, E. Kaxiras, J. G. Checkelsky and R. Comin, "Topological flat bands in frustrated kagome lattice CoSn ", *Nat. Commun.* **11**, 4004 (2020).
14. B. T. Fichera, A. Kogar, [L. Ye](#), B. Göcke, A. Zong, J. G. Checkelsky and N. Gedik, "Second harmonic generation as a probe of broken mirror symmetry", *Phys. Rev. B* **101**, 241106(R) (2020).
13. M. Kang*, [L. Ye*](#), S. Fang, J.-S. You, A. Levitan, M. Han, J. I. Facio, C. Jozwiak, A. Bostwick, E. Rotenberg, M. K. Chan, R. D. McDonald, D. Graf, K. Kaznatcheev, E. Vescovo, D. C. Bell, E. Kaxiras, J. van den Brink, M. Richter, M. P. Ghimire, J. G. Checkelsky and R. Comin, "Dirac fermions and flat bands in the ideal kagome metal FeSn ", *Nat. Mater.* **19**, 163-169 (2020).

12. M. P. Ghimire, J. I. Facio, J.-S. You, L. Ye, J. G. Checkelsky, S. Fang, E. Kaxiras, M. Richter and J. van den Brink, "Creating Weyl nodes and controlling their energy by magnetization rotation", *Phys. Rev. Research* **1**, 032044(R) (2019).
11. S. W. Greenwald, G. McDowell, W. Corning, A. Devarakonda, L. Ye and J. G. Checkelsky, "Crystal VR: creating an immersive scientific tool for learning and research", *IEEE TALE* 2019, 1-7 (2019).
10. L. Ye, M. K. Chan, R. D. McDonald, D. Graf, M. Kang, J. Liu, T. Suzuki, R. Comin, L. Fu and J. G. Checkelsky, "de Haas-van Alphen effect of correlated Dirac states in kagome metal Fe_3Sn_2 ", *Nat. Commun.* **10**, 4870 (2019).
9. H. Inoue, M. Han, L. Ye, T. Suzuki and J. G. Checkelsky, "Molecular beam epitaxy growth of antiferromagnetic kagome metal FeSn ", *Appl. Phys. Lett.* **115**, 072403 (2019).
8. A. Zong, X. Shen, A. Kogar, L. Ye, C. Marks, D. Chowdhury, T. Rohwer, B. Freelon, S. Weathersby, R. Li, J. Yang, J. Checkelsky, X. Wang and N. Gedik, "Ultrafast manipulation of mirror domain walls in a charge density wave", *Sci. Adv.* **4**, 5501 (2018).
7. L. Ye*, M. Kang*, J. Liu, F. von Cube, C. R. Wicker, T. Suzuki, C. Jozwiak, A. Bostwick, E. Rotenberg, D. C. Bell, L. Fu, R. Comin and J. G. Checkelsky, "Massive Dirac fermions in a ferromagnetic kagome metal", *Nature* **555**, 638 (2018).
6. L. Ye, T. Suzuki, C. R. Wicker and J. G. Checkelsky, "Extreme magnetoresistance in magnetic rare earth monopnictides", *Phys. Rev. B* **97**, 081108(R) (2018).
5. L. Ye, T. Suzuki and J. G. Checkelsky, "Electronic transport on the Shastry-Sutherland lattice in Ising-type rare-earth tetraborides", *Phys. Rev. B* **95**, 174405 (2017).
4. T. Ideue, L. Ye, J. G. Checkelsky, H. Murakawa, Y. Kaneko and Y. Tokura, "Thermoelectric probe for Fermi surface topology in the three-dimensional Rashba semiconductor BiTeI ", *Phys. Rev. B* **92**, 115144 (2015).
3. L. Ye, J. G. Checkelsky, F. Kagawa and Y. Tokura, "Transport signatures of Fermi surface topology change in BiTeI ", *Phys. Rev. B* **91**, 201104(R) (2015).
2. X. Zhang, Y. G. Zhao, Y. F. Cui, L. D. Ye, D. Y. Zhao, P. S. Li, J. W. Wang, M. H. Zhu, H. Y. Zhang and G. H. Rao, "Investigation on the pyroelectric property of polycrystalline GdMnO_3 ", *Appl. Phys. Lett.* **104**, 062903 (2014).
1. X. Zhang, Y. G. Zhao, Y. F. Cui, L. D. Ye, J. W. Wang, S. Zhang, H. Y. Zhang and M. H. Zhu, "Magnetodielectric effect in Z-type hexaferrite", *Appl. Phys. Lett.* **100**, 032901 (2012).

*Equal contribution

PATENTS

1. (Provisional) L. Ye and J. G. Checkelsky, "Quantum Interference Magnets", Massachusetts Institute of Technology, 2020.

INVITED TALKS

22. Flat bands in kagome lattice metals
TopoMag23, "Topology and Fractionalization in Magnetic Materials", Ohio State University, May 2023.
21. Flat bands in kagome lattice metals
KITP Workshop, "Topology, Symmetry and Interactions in Crystals: Emerging Concepts and Unifying Themes", University of California Santa Barbara, Apr 2023.

20. Dirac fermions and flat bands in kagome lattice metals (Virtual)
Future Electronic Materials Research in Australia Workshop, Monash University, Mar 2023.
19. Using anisotropic strain to probe multipolar order parameters (Virtual)
Condensed Matter Seminar, Hong Kong University of Science and Technology, Mar 2023.
18. Dirac fermions and flat bands in kagome lattice metals
Design Principles for Topological Quantum Materials Workshop, Quantum Foundry, University of California Santa Barbara, Mar 2023.
17. Topological Dirac fermions in magnetic kagome metals (Virtual)
Condensed Matter Seminar, Beijing Institute of Technology, Nov 2022.
16. Flat band-kagome metals and the elastocaloric effect
Condensed Matter Seminar, University of California Berkeley, Oct 2022.
15. A flat band-induced correlated kagome metal
Quantum Matter Working Group, Los Alamos National Laboratory, Aug 2022.
14. Quantum oscillations in ferromagnetic kagome metals (Virtual)
2022 Joint European Magnetic Symposia, Jul 2022.
13. Elastocaloric effects in f -electron orders
5th EPIQS Postdoctoral Symposium, Beverly, Jun 2022.
12. Ni₃In: a flat band-induced correlated kagome metal (Virtual)
Condensed Matter Seminar, Iowa State University, Apr 2022.
11. Ni₃In: a flat band-induced correlated kagome metal
Symposium on Quantum Criticality and Strange Metal Physics, APS Annual Meeting, Mar 2022.
10. Searching for flat bands in kagome lattice metals (Virtual)
DMC Seminar, Bariloche Atomic Centre, Feb 2022.
9. Correlated electronic quantum materials by design
Quantum Matter Seminar, California Institute of Technology, Dec 2021.
8. A flat band-induced correlated kagome metal (Virtual)
Pioneer Symposia, "Novel Superconductivity and Topological Flat Bands", KPS Fall Meeting, Oct 2021.
7. Searching for flat bands in kagome lattice metals
QMC Physics Colloquium, University of Maryland, College Park, Oct 2021.
6. Dirac fermions and flat bands in kagome lattice metals (Virtual)
Virtual Conference on Aspects of Condensed Matter Physics in Quantum Computing and Sensing, TIFR Center for Interdisciplinary Sciences, Aug 2020.
5. Dirac fermions and flat bands in kagome lattice metals (Virtual)
ITF zoom seminar, IFW Dresden, Apr 2020.
4. Designing topological electronic states on the kagome lattice
LASSP special seminar, Cornell University, Dec 2019.
3. Massive Dirac fermions in ferromagnetic kagome metal Fe₃Sn₂
3rd EPIQS Postdoctoral Symposium, Beverly, Jun 2019.

	<ol style="list-style-type: none"> 2. de Haas-van Alphen effect of correlated Dirac states in kagome metal Fe_3Sn_2 Boston Area Carbon Nanoscience Meeting, Harvard University, Nov 2018. 1. Electronic transport on the Shastry-Sutherland lattice in Ising-like rare earth tetraborides Boston Area Carbon Nanoscience Meeting, MIT, Mar 2016.
SUMMER SCHOOL LECTURES	<ol style="list-style-type: none"> 3. Lattice-driven flat bands in quantum materials Princeton Summer School on Condensed Matter Physics, "Fractionalization, criticality and unconventional quantum materials", Princeton University, Jul 2023. 2. Dirac fermions and flat bands in kagome metals (Virtual) International Workshop on Computational Materials Engineering, Central Department of Physics, Tribhuvan University, Oct 2021. 1. Dirac fermions and flat bands in kagome metals (Virtual) International Summer School and Workshop on Emergent Quantum Many-body Phenomena, NCTS Taiwan, Jul 2021.
ACADEMIC & PROFESSIONAL ENGAGEMENT	<p>Reviewer for Advanced Quantum Technologies, Angewandte Chemie, MDPI Condensed Matter, MDPI Nanomaterials, Nano Letter, Nature, npj Quantum Materials, Physical Review B, Physical Review Letter, Physical Review Materials, Physical Review Research; Guest editor for Focus Session on flat band engineering at Communication Physics</p> <p>Reviewer for Stanford Synchrotron Radiation Lightsource beamline proposal, Moore foundation EPiQS Flexible Funding Call for Ideas</p> <p>Organizer of Moore Foundation EPiQS Postdoctoral Symposia (2023-25); APS March Meeting Focus Session "Topological Materials: Synthesis, Characterization, and Modeling" (2024); CIQM Quantum Materials and Devices Seminar, Harvard University (2020)</p> <p>Member of Graduate Women in Physics at MIT (2018-20); Association for Women in Science, Palo Alto Chapter, (2020-21); Women in Science and Engineering (WISE) group, Stanford University (2022-23)</p>
TEACHING, MENTORING, & OUTREACH	<p>Mentor of 5 graduate students at MIT and Stanford University, since 2016</p> <p>Mentor of 1 MIT undergraduate student (now in PhD program at University of Chicago), 1 undergraduate student from Mount Holyoke College (now in PhD program at Columbia University) and 1 undergraduate student from Howard University, 2015-2018</p> <p>Museum of Science NanoDays exhibition, Crystal Virtual Reality, 2019</p> <p>Mentor in MIT Physics Directed Reading Program on "Introduction to topological insulators and semimetals", 2019</p> <p>Organizer and lecturer, MIT IAP short course "Materials Characterization", 2017</p> <p>Teaching Assistant, Special English Lessons, School of Engineering, University of Tokyo, 2013</p>