

# Minhao He

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## EDUCATION

2017 – 2022 (expected) Ph.D. in physics, University of Washington, Seattle, WA

Advisor: Prof. Xiaodong Xu

2013 – 2017 B. Sc in Physics, Yuan Pei College, Peking University, Beijing, China

## PUBLICATION

1. **M. He\***, J. Cai\*, Y. Zhang, Y. Liu, Y. Li, T. Taniguchi, K. Watanabe, D. H. Cobden, M. Yankowitz, X. Xu, **Chirality-dependent topological states in twisted double bilayer graphene**, preprint on arXiv, 2021, <https://arxiv.org/abs/2109.08255>.
2. X. Wang, J. Zhu, K. L. Seyler, P. Rivera, H. Zheng, Y. Wang, **M. He**, T. Taniguchi, K. Watanabe, J. Yan, D. G. Mandrus, D. R. Gamelin, W. Yao, X. Xu, **Moiré trions in MoSe<sub>2</sub>/WSe<sub>2</sub> heterobilayers**, Nat. nano., 2021, <https://doi.org/10.1038/s41565-021-00969-2>
3. J. Cai, D. Ovchinnikov, Z. Fei, **M. He**, T. Song, Z. Lin, C. Wang, D. Cobden, J. Chu, Y. Cui, C. Chang, D. Xiao, J. Yan, X. Xu, **Electric control of a canted-antiferromagnetic Chern insulator**, preprint on arXiv, 2021, <https://arxiv.org/abs/2107.04626>;
4. **M. He**, Y. Zhang, Y. Li, Z. Fei, K. Watanabe, T. Taniguchi, X. Xu, M. Yankowitz, **Competing correlated states and abundant orbital magnetism in twisted monolayer-bilayer graphene**, Nat. Commun., 2021, <https://doi.org/10.1038/s41467-021-25044-1>;
5. P. Rivera, **M. He**, B. Kim, S. Liu, C. Rubio-Verdú, H. Moon, L. Mennel, D. A. Rhodes, H. Yu, T. Taniguchi, K. Watanabe, J. Yan, D. G. Mandrus, H. Dery, A. Pasupathy, D. Englund, J. Hone, W. Yao, & X. Xu, **Intrinsic Donor-Bound Excitons in Ultraclean Monolayer Semiconductors**, Nat. Commun., 2021, <https://doi.org/10.1038/s41467-021-21158-8>;
6. D. Ovchinnikov, X. Huang, Z. Lin, Z. Fei, J. Cai, T. Song, **M. He**, Q. Jiang, C. Wang, H. Li, Y. Wang, Y. Wu, D. Xiao, J. Chu, J. Yan, C. Chang, Y. Cui, X. Xu, **Intertwined Topological and Magnetic Orders in Atomically Thin Chern Insulator MnBi<sub>2</sub>Te<sub>4</sub>**, Nano Lett., 2021, <https://doi.org/10.1021/acs.nanolett.0c05117>;
7. S. Chen\*, **M. He\***, Y. Zhang, V. Hsieh, Z. Fei, K. Watanabe, T. Taniguchi, D. H. Cobden, X. Xu, C. R. Dean, M. Yankowitz, **Electrically tunable correlated and topological states in twisted monolayer-bilayer graphene**, Nat. Phys., 2020, <https://doi.org/10.1038/s41567-020-01062-6>;
8. **M. He**, Y. Li, J. Cai, Y. Liu, K. Watanabe, T. Taniguchi, X. Xu, M. Yankowitz, **Symmetry breaking in twisted double bilayer graphene**, Nat. Phys., 2020, <https://doi.org/10.1038/s41567-020-1030-6> ;
9. **M. He\***, P. Rivera\*, D. V. Tuan, N. P. Wilson, M. Yang, T. Taniguchi, K. Watanabe, J. Yan, D. G. Mandrus, H. Yu, H. Dery, W. Yao, X. Xu, **Valley Phonons and Exciton Complexes in a Monolayer Semiconductor**, Nat. Commun., 2020, <https://doi.org/10.1038/s41467-020-14472-0>;

10. X. Cai, T. Song, N. P. Wilson, G. Clark, **M. He**, X. Zhang, T. Taniguchi, K. Watanabe, W. Yao, D. Xiao, M. A. McGuire, D. H. Cobden, X. Xu, **Atomically Thin CrCl<sub>3</sub>: An in-Plane Layered Antiferromagnetic Insulator**, Nano Lett., 2019, <https://doi.org/10.1021/acs.nanolett.9b01317>;

\* :equal contribution

## COLLOQUIA/SEMINARS TALK

1. Chirality-dependent topological states in twisted double bilayer graphene, on NSF Materials Research Science and Engineering Centers (MRSEC) All-Hands meeting, Aug. 2021
2. Competing correlated states and abundant orbital magnetism in twisted monolayer-bilayer graphene, in APS March Meeting, March, 2021.
3. Valley phonons and exciton complexes in a monolayer semiconductor, on DOE Energy Frontiers Research Center (EFRC) Seminar, Sept. 2020.
4. Valley phonons and exciton complexes in a monolayer semiconductor, on ARO Multidisciplinary University Research Initiative (MURI) Seminar, July, 2020.
5. Correlated and topological states in twisted Graphene systems, on NSF Materials Research Science and Engineering Centers (MRSEC) Seminar, July, 2020.
6. Correlated Insulating states in Twisted double bilayer graphene, on NSF Materials Research Science and Engineering Centers (MRSEC) Seminar, Nov. 2019.
7. Mott Insulator: A correlated Metal-Insulator transition, on Condensed Matter Journal Club in University of Washington, May, 2019.

## AWARDS & SCHOLARSHIPS

- General Excellence Departmental Research Fellowships in University of Washington, 2021
- The Hans G. Dehmelt Prize in Experimental Physics in University of Washington, 2020
- Clean Energy Institute Graduate Fellowship in University of Washington, 2019
- May Fourth Scholarship in Peking University, 2014, 2016
- Merit Student Award in Peking University, 2016
- China Scholarship Council(CSC) Scholarship, 2016
- Academic Excellence Award in Peking University, 2014

## TEACHING&MENTORING

- Lead and develop 2D graphene Lab module in EMDS class (Energy, Material, Device, and Systems), in Clean Energy Institute, University of Washington. (Fall 2018 and 2019)
- Mentor the lab work of two Undergraduates and one master student in Xu Lab, University of Washington.

## SOCIAL SERVICE

- Volunteer on Solar Car Derby on AAAS Family Science Days (FSD) event, Seattle, WA, Feb. 2020.
- Volunteer teacher on Science Explorers session at Sanislo elementary, Seattle, WA, May, 2019.