CURRICULUM VITAE **Biao Huang** updated: 10/2021

Contact Information

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Address: *Kavli Institute for Theoretical Sciences, University of Chinese Academy of Sciences, Beijing 100190, China*

Employment

Assistant Professor, Kavli Institute for Theoretical Sciences, University of Chinese Academy of Sciences, 2021 – present.

Guest Scientist, Max Planck Institute for the Physics of Complex Systems, 2019 – 2021.

Postdoc, University of Pittsburgh, Advisor: Prof. W. Vincent Liu, 2016 – 2019.

Education

Ph.D. in Physics, The Ohio State University, 2010 – 2016. Advisor: Prof. Tin-Lun Ho

B.S. in Physics, Beijing Normal University, 2005 – 2009.

Recent Research Interests

Dynamical phases — Floquet-driven interacting systems such as time crystals, interplay between temporal orders and Bloch band structures, Floquet topological phases

Quantum spin liquids — Classification, topological properties, and detection of symmetry fractionalization

Publication List

1. **BH,** Viktor Novicenko, André Eckardt and Gediminas Juzeliūnas, *"Floquet chiral hinge modes and their interplay with Weyl physics in a three-dimensional lattice"*
   Phys. Rev. B **104,** 104312 (2021), arXiv:2101.08281.
2. **BH** and W. Vincent Liu, *"Floquet higher-order topological insulators with anomalous dynamical polarization"*
   Phys. Rev. Lett. **124,** 216601 (2020) arXiv:1811.00555
3. Haiping Hu, **BH**, W. Vincent Liu, Erhai Zhao, *"Dynamical singularities of Floquet higher-order topological insulators"*
   Phys. Rev. Lett. **124,** 057001 (2020) arXiv:1905.03727
4. **BH** and W. Vincent Liu, *"Moiré localization in two-dimensional quasiperiodic systems"*
   Phys. Rev. B **100,** 144202 (2019) arXiv:1905.08277
5. Hong-Chen Jiang, Chang-Yan Wang, **BH,** Yuan-Ming Lu, *"Field induced quantum spin liquid with spinon Fermi surfaces in the Kitaev model"*
   ArXiv: 1809.08247
6. **BH,** Wonjune Choi, Yong Baek Kim and Yuan-Ming Lu, *"Classification and properties of quantum spin liquids on the hyperhoneycomb lattice"*
   Phys. Rev. B **97,** 195141 (2018) arXiv:1802.04273
7. **BH,** Ying-Hai Wu and W. Vincent Liu, *"Clean Floquet Time Crystals: Models and Realizations in Cold Atoms"*
   Phys. Rev. Lett. **120,** 110603 (2018) arXiv:1703.04663
8. **BH,** Yuan-Ming Lu, Yong Baek Kim, *"Interplay of non-symmorphic symmetry and spin-orbit coupling in hyperkagome spin liquids: Applications to $Na_4Ir_3O_8$"*
   Phys. Rev. B **95,** 054404 (2017) arXiv:1610.06191
9. Tin-Lun Ho and **BH**, *"Spinor Condensates on a Cylindrical Surface in Synthetic Gauge Fields"*
   Phys. Rev. Lett. **115,** 155304 (2015) arXiv: 1503.00300
10. **BH**, *"Hall Viscosity Revealed via Density Response"*
    Phys. Rev. B, **91,** 235101 (2015) arXiv:1501.05240
11. Tin-Lun Ho and **BH**, *"Local Spin Structure of Large Spin Fermions"*
    Phys. Rev. A, **91,** 043601 (2015) arXiv:1401.4513
12. **BH,** Song Li, Yongge Ma, *"Five-Dimensional Metric $f(R)$ Gravity and the Accelerated Universe"*
    Phys. Rev. D **81,** 064003 (2010) arXiv:0912.4581

Talks and Posters

- 12/2019: *"Floquet higher-order topological insulators"*, International conference on Frontiers in Synthetic Quantum Systems , Shanghai, China, **invited talk**

- 08/2019: *"Floquet higher-order topological insulators: dynamical quadrupoles, singularities, and detections"*, Seminar at KITS, University of Chinese Academy of Science, Beijing, China, **invited talk**
- 03/2019: *"Floquet higher-order topological insulators: Topology and comprehensive detection in optical lattices"*, International conference on Universal Theme of Bose-Einstein Condensation, Pittsburgh PA, USA, **invited talk**
- 08/2018 Seminar, *"Floquet time crystals made clean"*, Institute of Physics, Chinese Academy of Science, Beijing, China, **invited talk**
- 07/2018 Seminar, *"Time crystals made clean"*, Fudan University, Shanghai, China, **invited talk**
- 06/2018 International Conference on Quantum Connections: Topology and Time, *"Clean Floquet time crystals"*, Stockholm, Sweden, **invited talk**
- 08/2017 Summer School on Emergent Phenomena in Quantum Materials (Cornell) *"Clean Floquet time crystals: models and realizations in cold atoms"* Poster **(Best poster award)**
- 11/2015 ICMT Seminar, *"Spinor Bose-Einstein condensate on a cylindrical surface in synthetic gauge fields"*, University of Illinois at Urbana-Champaign, **invited talk**
- 08/2015 Summer School on Emergent Phenomena in Quantum Materials (Cornell), *"Spinor condensates on a cylindrical surface in synthetic gauge fields"*, contributed poster
- 04/2015 Frontiers in Quantum Simulation with Cold Atoms (INT Seattle 2015), *"Quantum gases on curved surfaces"* contributed poster
- APS DAMOP Meeting contributed talks
  - 2019: *"Moiré Localization"*, Milwaukee, WI
  - 2018: *"Helical Spacetime Density Waves"*, Ft. Lauderdale, FL
  - 2017: *"Mott Time Crystal: Models and Realizations in Cold Atoms"*, Sacramento, CA
- APS March Meeting contributed talks
  - 2019: *"Higher Order Floquet Topological Insulators with Anomalous Corner States"*, Boston, MA
  - 2018: *"Detecting Symmetry Fractionalization by Magnetic Impurities"*, Los Angeles, LA
  - 2017: *"Quantum Spin Liquids in Hyperhoneycomb Lattices: Classifications and Applications to Pressurized β-Li_2IrO_3"*, New Orleans, LA
  - 2016: *"Classification of Z_2 spin liquids in a hyperkagome lattice by projective symmetry groups"*, Baltimore MD
  - 2015: *"Realization of BEC on Cylindrical Surfaces with a Landau Gauge"*, San Antonio TX
  - 2014: *"The Local Spin Structure of Large Spin Fermions"*, Denver CO