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硕博连读	2007-2012	中国科学院物理研究所
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Postdoc.	2015-2018	Free University of Berlin, Germany
	2013-2015	Princeton University, USA
	2012-2013	Beijing Computational Science Research Center
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Research Focus



研究领域

主要运用数值计算与量子信息的手段研究：

- 1、分数陈绝缘体
 - 2、分数量子霍尔效应
 - 3、局域化与非平衡动力学
 - 4、拓扑相中的其它新奇物理现象
1. Fractional Chern Insulator
 2. Fractional Quantum Hall Effect
 3. Localization and Nonequilibrium dynamics
 4. Other Novel Phenomena in Topological Phases of Matter

Representative Publications



代表出版物

1. *Exotic Non-Abelian Topological Defects in Lattice Fractional Quantum Hall States*, [Zhao Liu](#), Gunnar Moeller, and Emil J. Bergholtz, **Phys. Rev. Lett.** 119, 106801 (2017).
2. *Quantum entanglement as a diagnostic of phase transitions in disordered fractional quantum Hall liquids*, [Zhao Liu](#) and R. N. Bhatt, **Phys. Rev. Lett.** 117, 206801 (2016), **Editor's Suggestion**.
3. *Model Fractional Chern Insulators*, Joerg Behrmann, [Zhao Liu](#), Emil J. Bergholtz, **Phys. Rev. Lett.** 116, 216802 (2016).
4. *Topology and interactions in a frustrated slab: tuning from Weyl semimetal to $C>1$ fractional Chern insulators*, E. J. Bergholtz, [Zhao Liu](#), M. Trescher, R. Moessner, M. Udagawa, **Phys. Rev. Lett.** 114, 016806 (2015).
5. *Tunable band topology reflected by fractional quantum Hall states in two-dimensional lattices*, Dong Wang, [Zhao Liu](#), Junpeng Cao, and Heng Fan, **Phys. Rev. Lett.** 111, 186804 (2013).
6. *Topological flat band models and fractional Chern insulators*, Emil J. Bergholtz and [Zhao Liu](#), **Int. J. Mod. Phys. B** 27, 1330017 (2013), **invited review**.
7. *Hierarchy of fractional Chern insulators and competing compressible states*, Andreas M. Laeuchli, [Zhao Liu](#), Emil J. Bergholtz, and R. Moessner, **Phys. Rev. Lett.** 111, 126802 (2013).
8. *Fractional Chern insulators in topological flat bands with higher Chern number*, [Zhao Liu](#), Emil J. Bergholtz, Heng Fan, and Andreas M. Laeuchli, **Phys. Rev. Lett.** 109, 186805 (2012).