

# Resume of Dr. Long Zhang

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## Research interests

Condensed matter theory, focusing on correlated electron systems:

- Quantum magnetism, superconductivity and other competing phases in cuprates, iridates, etc.
- Topological states of matter: topological insulators and superconductors.
- Unconventional quantum phase transitions: theory and quantum Monte Carlo simulations.

## Education and employment

2017/06 to present	Kavli Institute for Theoretical Sciences, University of Chinese Academy of Sciences, Lecturer (2017/06 -- 2017/11), Associate Professor (since 2017/11).
2015/07 -- 2017/06	International Center for Quantum Materials, School of Physics, Peking University, Postdoctoral Fellow. Supervisor: Prof. Fa Wang.
2010/08 -- 2015/07	Institute for Advanced Study, Tsinghua University, Ph.D. Advisor: Prof. Zheng-Yu Weng. Thesis: Spin-charge correlation and high- $T_c$ superconductivity in doped Mott insulators.
2006/08 -- 2010/07	Department of Physics, Tsinghua University, B.Sc.

## Selected publications

1. **L. Zhang\***, Universal thermodynamic signature of self-dual quantum critical points, Phys. Rev. Lett. 123, 230601 (2019).
2. Z. Han, T. Li, **L. Zhang\***, G. Sullivan, and R. Du\*, Anomalous conductance oscillations in the hybridization gap of InAs/GaSb quantum wells, Phys. Rev. Lett. 123, 126803 (2019).
3. **L. Zhang\***, Low-energy moire band formed by Dirac zero modes in twisted bilayer graphene, Sci. Bull. 64, 495 (2019).
4. C. Ding\*, **L. Zhang\***, and W. Guo, Engineering surface critical behavior of (2+1)-dimensional O(3) quantum critical points, Phys. Rev. Lett. 120, 235701 (2018).
5. **L. Zhang** and F. Wang, Unconventional surface critical behavior induced by a quantum phase transition from the two-dimensional Affleck-Kennedy-Lieb-Tasaki phase to a Neel-ordered phase, Phys. Rev. Lett. 118, 087201 (2017).
6. **L. Zhang**, X.-Y. Song, and F. Wang, Quantum oscillation in narrow-gap topological insulators, Phys. Rev. Lett. 116, 46404 (2016).
7. **L. Zhang**, F. Wang, and D.-H. Lee, Compass impurity model of Tb substitution in Sr<sub>2</sub>IrO<sub>4</sub>, Phys. Rev. B 94, 161118 (2016).
8. **L. Zhang** and J.-W. Mei, Quantum oscillation as diagnostics of pseudogap state in underdoped cuprates, Europhys. Lett. 114, 47008 (2016).

## Honors and awards

2019/12	Member of Youth Innovation Promotion Association, Chinese Academy of Sciences
2016/12	Boya Postdoctoral Fellowship, Peking University
2015/07	Beijing Graduate with Excellence, Beijing Education Commission
2014/10	Jiang Nan Xiang Scholarship, Tsinghua University
2010/09	C. N. Yang Graduate Fellowship, Institute for Advanced Study, Tsinghua University
2010/07	Graduate with Distinction, Tsinghua University
2010/07	Chi Sun Yeh Prize for Excellent Graduates, Department of Physics, Tsinghua University