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EDUCATION AND RESEARCH

Postdoctoral Associate at Massachusetts Institute of Technology, Cambridge, MA

- Research advisor: Prof. Wolfgang Ketterle, Jan. 2016 – Present
    - Research in the many-body system with strong correlation. Focusing on the observation of magnetic ordering for bosonic atoms in optical lattices. Exploring and demonstrating new quantum materials.
- Research advisor: Prof. Vladan Vuletić, Jan. 2015 – Jan. 2016
    - Generating and manipulating new classes of quantum entanglement via photon-atom interactions aided by cavity.
    - All-laser cooling to the quantum degeneracy without evaporative cooling.

Research Assistant at Massachusetts Institute of Technology, Cambridge, MA

- Graduate research with Prof. Vladan Vuletić, Sep. 2008 – Jan. 2015
    - Realizing the strong photon-photon interaction at the single-photon level. Demonstrating the pioneer realization of the single-photon transistor and vacuum induced transparency.
    - Ph.D., Atomic Physics, Feb 2015

  Thesis: *"Strong Photon-Photon Interactions at the Single-Photon Level"*

Master of Science and Bachelor of Science at Peking University, Beijing, China

- Research with Prof. Xuzong Chen, Sept. 2004 – June 2008
- M. S., Atomic Physics, June 2008
- B. S., Electrical Engineering, June 2005

HONORS AND AWARDS

- 国家优秀自费留学生奖学金，国家留学基金管理委员会 (2014)

  (Award for Outstanding Students Abroad, China Scholarship Council, 2014)
- Martin Deutsch Student Award for Excellence in Experimental Physics, MIT (2013)
- Lester Wolfe Fellowship, MIT (2008-2009)

PUBLICATIONS

12. J. Hu, A. Urvoy, Z. Vendeiro, V. Crepel, **W. Chen**, V. Vuletić, **Science 358**, 1078 (2017)
11. J. Hu, **W. Chen**, Z. Vendeiro, A. Urvoy, B. Braverman, V. Vuletić, Vacuum Spin Squeezing, **Phys. Rev. A 96**, 050301(R) (2017)
10. J. Hu, Z. Vendeiro, **W. Chen**, H. Zhang, R. McConnell, A. S. Sørensen, V. Vuletić, Strictly Nonclassical Behavior of a Mesoscopic System, **Phys. Rev. A 95**, 030105(R) (2017)
9. W. C. Burton, C. J. Kennedy, W. C. Chung, S. Vadia, **W. Chen**, W. Ketterle, Coherence Times of Bose-Einstein Condensates beyond the Shot-Noise Limit via Superfluid Shielding, **Phys. Rev. Lett. 117**, 275301 (2016)
8. M. Hosseini, K. M. Beck, Y. Duan, **W. Chen**, V. Vuletić, Partially nondestructive continuous detection of individual traveling optical photons. ***Phys.*** **Rev. Lett. 116**, 033602 (2016)
7. J. Hu, **W. Chen**, Z. Vendeiro, H. Zhang, V Vuletić, Entangled collective-spin states of atomic ensembles under nonuniform atom-light interaction. **Phys. Rev. A 92**, 063816 (2015)
6. **W. Chen**, J. Hu, Y. Duan, B. Braverman, H. Zhang, V. Vuletić, Carving complex many-atom entangled states by single-photon detection. **Phys. Rev. Lett. 115**, 250502 (2015)
5. K. M. Beck, **W. Chen**, Q. Lin, M. Gullans, M. D. Lukin, V. Vuletić, Cross modulation of two laser beams at the individual-photon level. ***Phys. Rev. Lett.*** **113**, 113603 (2014)
4. **W. Chen**, K. M. Beck, R. Bücker, M. Gullans, M. D. Lukin, H. Tanji-Suzuki, V. Vuletić, All-optical switch and transistor gated by one stored photon. ***Science*** **341**, 768 (2013)
3. H. Tanji-Suzuki, **W. Chen**, R. Landig, J. Simon, V. Vuletic, Vacuum-induced transparency. ***Science*** **333**, 1266 (2012)
2. **W. Chen**, X. Qi, L. Yi, K. Deng, Z. Wang, J. Chen, and X. Chen, Optical phase locking with a large and tunable frequency difference based on a vertical-cavity surface-emitting laser. ***Opt. Lett.*** **33**, 357 (2008)
1. **W. Chen**, J. Yuan, X. Qi, L. Yi, Z. Wang, X. Liu, X. Chen, Design of 780nm external cavity semiconductor laser and higher harmonic frequency stabilization. ***Chin. J. Lasers*** **34**, 895 (2007)

HONORS AND AWARDS

- 2018 入选第十四批国家国家“千人计划”青年项目
  (China 1000-Talents Plan for Young Researchers)
- 2014 2013年国家优秀自费留学生奖学金
  (2013 Chinese Government Award for Outstanding Self-financed Students Abroad)
- 2013 The Martin Deutsch Student Award for Excellence in Experimental Physics

SELECTED TALKS

- Conference Presentation, “Carving complex many-atom entangled states by single-photon detection”, **DAMOP**, Rhode Island, 2016
- Invited talk, “The tale of a single photon: gating all-optical transistor and carving complex entangled states”, **JQI and UMD**, Maryland, 2015
- Invited talk, “Strong Photon-Photon Interactions at the Single-Photon Level”, **USTC**, Shanghai, 2015
- Invited talk, “Strong Photon-Photon Interactions at the Single-Photon Level”, **HUST**, Wuhan, 2015
- Invited talk, “All-Optical Switch and Transistor Gated by One Stored Photon”, **PQE**, Utah, 2014
- Invited talk, “All-Optical Switch and Transistor Gated by One Stored Photon”, **DAMOP**, Quebec City, 2013