
Curriculum Vitae

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Dr Guangqiang He

Born on August 8th, 1977 in Shandong Province (China). Married.

Nationality: People's Republic of China.

Language: Mandarin (Native Language), English: Perfect.

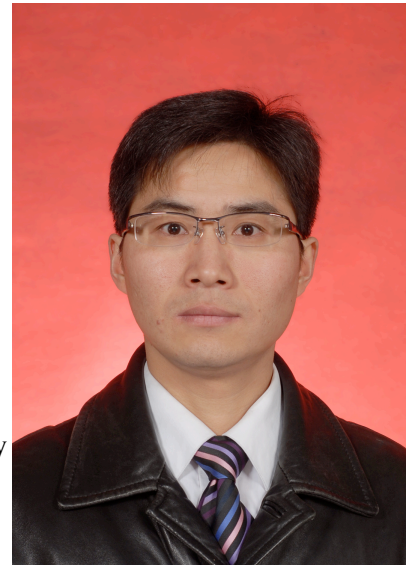
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Professional Experience

2011.12-present Department of Electronic Engineering, *Shanghai JiaoTong University*
Shanghai, 200240, P. R. China, Associate Professor

2010.6-2011.12 Department of Electronic Engineering, *Shanghai JiaoTong University*
Shanghai, 200240, P. R. China, Assistant Professor

2009.5-2010.5 Visiting Scientist, Department of Physics and Astronomy, Department of Physics
and Astronomy, *University of Rochester*, New York, 14627, USA
Host Professor: J. H. Eberly (Former President of OSA , 2007)

2006.4-2009.4 Department of Electronic Engineering, *Shanghai JiaoTong University*
Shanghai, 200240, P. R. China

Education

2003.3-2006.3 Ph.D. in communication and information system, *Shanghai JiaoTong University*

1999.9-2002.7 M.S. in Optoelectronics and Laser technology, State Key Laboratory of Laser
Technology, *Huazhong University of Science and Technology*

1995.9-1999.7 B.S. *Shandong University*

Honors and Awards

2011 SMC Excellent Young Faculty Award in Shanghai Jiao Tong University

2006 The Excellent Paper Award of 12th Chinese Quantum Optics Conference

2005 Shanghai-Applied Material Scholarship

2004 The winner of the 1st class of 3M Innovation Award

2004 The winner of "Three-Gun Cup" Innovation Award

Teaching Experience

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- 2009.9-2009.12 *University of Rochester, New York, USA*, Lecturer
Course taught together with Prof. Eberly: Quantum Optics III
Section: Continuous variable entanglement and its applications.
- 2006.9-present *Shanghai Jiaotong University*, Lecturer
Course taught: Electromagnetic Field
Fiber-Optic Communications Systems
Embedded System and its Applications
- 2001.9-2002.2 *Huazhong University of Science and Technology*, Teaching Assistant
Course taught: The Principle and Technology of Laser

Research Experience

Investigator

- 2015-2018: *Principle Investigator* Project sponsored by the National Natural Science Foundation of China (NSFC) (Grant No.61475099): **The investigation of generation and transmission problems of quantum entangled optical frequency comb based on micro/nano silicon resonators**
- 2012-2014: *Principle Investigator* Project sponsored by the National Natural Science Foundation of China (NSFC) (Grant No.61102053): **The theoretical investigation of multipartite frequency comb entanglement using effect of four wave mixing of optical fiber**
- 2012-2014: *Principle Investigator* Project sponsored by the Scientific Research Foundation for the Returned Overseas Chinese Scholars, State Education Ministry: **The theoretical investigation of frequency comb entanglement using effect of four wave mixing of optical fiber**
- 2011-2013: *Principle Investigator* Project sponsored by SMC Excellent Young Faculty Award in Shanghai Jiao Tong University (Grant No. 12X100010056): **The investigation of quantum information technology**
- 2011-2013: *Principle Investigator* Project sponsored by the National High Technology Research and Development Program of China (863 Program): **Quantum communication technology**
- 2007-2008: *Principle Investigator* Project sponsored by Shanghai Jiaotong University (Grant No.06ZBX800007): **Quantum secure communication based on binary-modulated coherent states**
- 2008-2010: *Primary Participant* Project sponsored by the National Natural Science Foundation of China (NSFC) (Grant No.60773085): **Research of implementation mechanism of quantum VPN technology in PON network**
- 2006-2006: *Primary Participant* Project sponsored by the National Natural Science Foundation of China (NSFC) (Grant No.10547125): **Investigation of the second order coherence property of optical field in continuous variable quantum key distribution**

2005-2007: *Primary Participant* Project sponsored by the National Natural Science Foundation of China (NSFC) (Grant No.60472018): **Investigation of quantum information storage and quantum memory**

Doctor's Research in State Key Laboratory of Fibre-Optic Local Area Networks and Advanced Optical Communication Systems, Shanghai Jiaotong University

- Investigation of theory and experiments of continuous variable quantum secure communication

Master's Research in State Key Laboratory of Laser Technology, Huazhong University of Science and Technology

- Investigation of KTP/Nd:YAG laser and its application in biomedicine

Undergraduate Research in Shandong University

- Investigation of singlechip-8051 and its application for number-controlling machine tool

Membership

- Life Member, Optics Society of America.
- IEEE Member.
- Referee for Optics Express.
- Referee for Quantum Information Processing.
- Referee for Journal of Physics B: Atomic, Molecular and Optical Physics.
- Referee for SCIENCE CHINA Physics, Mechanics & Astronomy
- Referee for International Journal of Photoenergy.
- Referee for International Journal of Theoretical Physics.
- Member, Shanghai Invention Association

Publications

Journal Publications (* Corresponding author)

1. Jianwu Liang, Jian Zhou, Jinjing Shi*, Minglu Cai and **Guangqiang He**, Improving continuous-variable quantum key distribution using the heralded noiseless linear amplifier with source in middle, International Journal of Theoretical Physics (Accepted)
2. Ronghuan Yang, Chenyang Li and **Guangqiang He***, Optimal Control of Continuous Variable Quantum Dense Coding Under Bosonic Structured Environments, International Journal of Theoretical Physics (2015), 54(7), 2312-2320
3. Yutian Wen, Xufei Wu, Rongyu Li, Qiang Lin and **Guangqiang He***, Five-partite entanglement generation in a high-Q microresonator, Physical Review A (2015) 91, 042311
4. Ronghuan Yang and **Guangqiang He***, The influence on secret key rate of faraday mirror's imperfection in continuous variable quantum key distribution, Acta Photonica Sinica (2015)

44(2): 0227001

5. Jiahao Zhang and **Guangqiang He***, Quantum network dense coding via continuous-variable graph states, *Quantum Information Processing* (2014) 13:2437-2450
6. Jun Zhang, **Guangqiang He** and Feng He*, Optimal laser pulse design for transferring the coherent nuclear wave packet of H₂⁺, *Molecular Physics* (2014) 112:14, 1929-1937
7. Yadong Wu, Yunze Cai, **Guangqiang He*** and Jun Zhang*, Quantum secret sharing with continuous variable graph state, *Quantum Information Processing* (2014) 13: 1085-1102
8. **Guangqiang He***, Taizhi Liu and Xin Tao, The multiparty coherent channel and its implementation with linear optics, *Optics Express* (2013) 21 (17):19790-19798
9. Jian Fang, Peng Huang, Yuan Lu, **Guangqiang He** and Guihua Zeng, Improved discrete-modulated continuous-variable quantum key distribution with a non-deterministic noiseless amplifier, *International Journal of Quantum Information* (2013) 11(4): 1350037
10. Peng Huang, Jun Zhu, **Guangqiang He** and Guihua Zeng, Bound on noise of coherent source for secure continuous-variable quantum key distribution, *International Journal of Theoretical Physics* (2013) 52:1572-1582
11. Zeyuan Shen, Jian Fang, **Guangqiang He** and Guihua Zeng, Synchronous scheme and experimental realization in CV-QKD system, *Chinese Journal of Lasers* (2013) 40(3), 0305004 (in Chinese)
12. Peng Huang, **Guangqiang He***, Jian Fang and Guihua Zeng*, Performance improvement of continuous-variable quantum key distribution via photon subtraction, *Physical Review A* (2013) 87, 012317
13. Xiaoqi Xiao, Jun Zhu, **Guangqiang He** and Guihua Zeng, A scheme for generating a multi-photon NOON state based on cavity QED, *Quantum Information Processing* (2013) 12:449-457
14. Yujing Qian, Zhean Shen and **Guangqiang He*** and Guihua Zeng, Quantum cryptography network via continuous-variable graph states, *Physical Review A* (2012) 86, 052333
15. Xilang Zhou, **Guangqiang He**, Junyan Wang and Xuguang Li, Teaching Reform and Practice to Platform Course on Electromagnetic Field, *Journal of EEE*, (2012) 34(3), 29 (in Chinese)
16. Peng Huang, Jun Zhu, Xiaoqi Xiao, **Guangqiang He** and Guihua Zeng, Different dynamics of classical and quantum correlations under decoherence, *Quantum Information Processing* (2012)

11 (6), 1845-1865

17. Heng Zhang, Jian Fang and **Guangqiang He***, Improving the performance of the four-state continuous-variable quantum key distribution by using optical amplifiers, *Physical Review A* (2012) 86, 022338
18. Peng Huang, Jun Zhu, **Guangqiang He** and Guihua Zeng, Study on the security of discrete-variable quantum key distribution over non-Markovian channels, *Journal of Physics B: Atomic, Molecular and Optical Physics* (2012) 45, 135501
19. Yi Gu, **Guangqiang He***, Xufei Wu, Generation of six partite continuous variable entanglement by nonlinear parametric down conversion cascaded with four sum frequency generation processes, *Physical Review A* (2012) 85, 052328
20. Lang Jiang, **Guangqiang He***, Ding Nie, Jin Xiong and Guihua Zeng, Quantum anonymous voting for continuous variable, *Physical Review A* (2012) 85, 042309
21. Yanyang Zhu, **Guangqiang He*** and Guihua Zeng, Unbiased quantum random number generation based on squeezed vacuum state, *International Journal of Quantum Information* (2012) Vol. 10, No. 1, 1250012
22. **Guangqiang He*** and Jingtao Zhang, Comment on “Teleportation of two-mode squeezed states”, *Physical Review A* (2011) 84, 046301
23. **Guangqiang He***, Jun Zhu and Guihua Zeng, Deterministic quantum key distribution based on Gaussian-modulated squeezed states, *Communications in Theoretical Physics* 56 (2011) 664-668
24. **Guangqiang He***, Jingtao Zhang, Jun Zhu and Guihua Zeng, Continuous variable quantum teleportation under Bosonic structured environments, *Physical Review A* (2011) 84, 034305
25. Peng Huang, **Guangqiang He**, Jun Zhu and Guihua Zeng, Nonadditivity of quantum capacities of quantum multiple access channel and butterfly network, *Physica Scripta* (2011) 84, 045013
26. Jingtao Zhang, **Guangqiang He***, Guihua Zeng, The dependence of fidelity on the squeezing parameter in teleportation of the squeezed coherent states, *Chinese Physics B* (2011) Vol. 20, No. 5, 050311
27. Peng Huang, **Guangqiang He**, Guihua Zeng, Quantum capacity of Pauli channels with memory, *Physica Scripta* (2011) 83, 015005
28. Jingtao Zhang, **Guangqiang He***, Guihua Zeng, Equivalence of continuous variable stabilizer states under local Clifford operations, *Physical Review A* (2009) 80, 052333

IDS Number: 526RH EI 20094912533558

29. Xudong Qian, **Guangqiang He**, Guihua Zeng, Realization of error correction and reconciliation of continuous quantum key distribution in detail, Science in China Series F-Information Sciences (2009) Vol. 52, No.9, pp.1598-1604

IDS Number: 495NK

30. Zhi Yi, **Guangqiang He**, Guihua Zeng, Quantum voting protocol using two-mode squeezed states, Acta Physica Sinica (2009) vol.58, no.5, pp.3166 (in Chinese)

IDS Number: 450EQ

31. **Guangqiang He***, Jingtao Zhang, Guihua Zeng, Teleportation of Continuous Variable Multimode Greeberger-Horne-Zeilinger Entangled States, Journal of Physics B: Atomic, Molecular and Optical Physics (2008) 41, 215503

IDS Number: 366GU EI 090311861377

32. Lijie Ren, **Guangqiang He***, Guihua Zeng, Universal teleportation via continuous-variable graph states, Physical Review A (2008) 78, 042302

IDS Number: 367SY EI 084311654889

33. Ding Nie, **Guangqiang He***, Guihua Zeng, Controlled teleportation of continuous variables, Journal of Physics B: Atomic, Molecular and Optical Physics (2008) 41, 175504

IDS Number: 341RO EI 084111635728

34. **Guangqiang He***, Siwei Zhu, Hongbin Guo, Guihua Zeng, Security of quantum key distribution using two-mode squeezed states against optimal beam splitter attack, Chinese Physics B (2008) vol.17, no. 4, pp.1263

IDS Number: 290BE EI081811226769

35. **Guangqiang He***, Hongbin Guo, Yudan Li, Siwei Zhu, Guihua Zeng, Quantum key distribution using binary-modulated coherent states, Acta Physica Sinica (2008) vol.57, no.4, pp.2212 (in Chinese)

IDS Number: 289XM EI081911245322

36. Guihua Zeng, Moonho Lee, Ying Guo, **Guangqiang He**, Continuous Variable Quantum Signature Algorithm, International Journal of Quantum Information (2007) vol.5, no.3, pp.553

IDS Number: 234PI

37. **Guangqiang He***, Zhi Yi, Jun Zhu, Guihua Zeng, Quantum key distribution using two-mode

squeezed states, *Acta Physica Sinica* (2007) vol.56, no.11 pp.6427 (in Chinese)

IDS Number: 233MA EI075110983837

38. Qian Wang, Jun Zhu, **Guangqiang He**, Guihua Zeng, Study on the design of DPC drive modular and performance monitored system based on embedded controller, *Journal of Optoelectronics • Laser* (2007) vol.18, no.10, pp.1176 (in Chinese)

EI074610915839

39. Jun Zhu, **Guangqiang He**, Guihua Zeng, Security analysis of continuous-variable quantum key distribution scheme, *Chinese Physics* (2007) vol.16, no.5, pp.1364

IDS Number: 169GN EI 072310636564

40. **Guangqiang He***, Guihua Zeng, Jun Zhu, Zheshen Zhang, Qian Wang, Xiaoqi Zhou, Xudong Qian, Jinye Peng, An integrable optic-fiber coherent state quantum identification system, *Chinese Journal of Lasers* (2007) Vol.34, No.7, pp.924 (in Chinese)

EI 073410776937

41. **Guangqiang He***, Jun Zhu, Guihua Zeng, Quantum secure communication using continuous variable Einstein-Podolsky-Rosen correlations, *Physical Review A* (2006) 73, 012314

IDS Number: 007ZB, EI06099724635

42. Jinye Peng, **Guangqiang He**, Jin Xiong, Guihua Zeng, Trojan horse attack strategy on quantum private communication, *LNCS* (2006) 3903, pp. 177

IDS Number: BEG62, EI06289986242

43. **Guangqiang He***, Guihua Zeng, A quantum identification scheme based on phase modulation, *Chinese Journal of Electronics* (2006) vol.15, no.1, pp.156

IDS Number: 006BK, EI06069682829

44. **Guangqiang He***, Guihua Zeng, A secure identification system using coherent states, *Chinese Physics* (2006) vol.15, no.2, pp.371

IDS Number: 010WJ EI 06049665543

45. **Guangqiang He***, Guihua Zeng, Deterministic quantum key distribution based on Gaussian-modulated EPR correlations, *Chinese Physics* (2006) vol.15, no.6, pp.1284

IDS Number: 052DI EI063210047550

46. **Guangqiang He***, Guihua Zeng, Quantum encryption protocol based on continuous variable EPR correlations, *Communications in Theoretical Physics* (2006) 46, pp.61

IDS Number: 066IQ

47. **Guangqiang He***, Guihua Zeng, A quantum identification scheme based on polarization modulation, Chinese Physics (2005) 14, pp.541

IDS Number: 908OZ EI05379354172

48. **Guangqiang He***, Zhengjia Li, Changhong Zhu, The prospect of percutaneous myocardial revascularization, Journal of Laser (2001) 22, 75 (in Chinese)

Conference Publications (* corresponding author)

1. **Guangqiang He**, The generation of five-partite entanglement in a high-Q microresonator using cascaded four-wave mixing processes, 14th International Conference on Squeezed States and Uncertainty Relations, Gdańsk, Poland, 29 June-03 July 2015.
2. Zeyu Zhang, Chengrui Zhu and **Guangqiang He***, Improving the performance of continuous variable quantum key distribution using fading effects of free-space channel, 2015 International Conference on Optical Instrument & Technology, May 17-19 2015, 9619-85, Beijing, China.
3. **Guangqiang He***, Ruofei Shen, Sichen Pan and Qiang Lin, Highly Efficient Integrated Generator of Tripartite Entanglement from Whispering Gallery Microresonator, Nonlinear Optics (NLO) 26-31 July 2015, W4A.3, Kauai, Hawaii, USA.
4. **Guangqiang He***, Ruofei Shen and Jian Ruan, Integrated source of path-polarization hyperentanglement using quasi-periodic nonlinear photonic crystal, Advanced Photonics 2015 IpT3B.5, 27 June-1 July 2015, Boston, Massachusetts, USA.
5. Yutian Wen, Qiang Lin and **Guangqiang He***, High-Q Microresonator as a Five-Partite Entanglement Generator via Cascaded Parametric Processes, CLEO JW2A.13, 10-15 May 2015, San Jose, CA, USA.
6. **Guangqiang He***, Continuous variable multipartite entanglement and its applications in quantum information technology; Taishan Academic Forum-Laser and Quantum Communications Conference (LQCC), October 18-20, 2013, Liaocheng, Shandong, China(Invited)
7. **Guangqiang He***, Continuous variable multipartite entanglement and its applications in quantum information technology; The 15th national conference of quantum optics in China, July 14-17, 2012, Guangzhou, Guangdong, China
8. **Guangqiang He***, Guihua Zeng, Continuous variable multipartite entanglement and its applications, 5th Asia Pacific Conference on Quantum Information Science, August 21-24, 2010,

Taiyuan, Shanxi, China

9. **Guangqiang He***, Guihua Zeng, Equivalence of continuous variable stabilizer states under local Clifford operations, 2nd Workshop on Entanglement and Quantum Control, June 7-10, 2010, Qufu, Shandong, China (Invited)
10. Symposium on optical interactions and quantum systems, University of Rochester, October 23-24, 2009
11. XI cross border workshop on laser science, Ottawa University, Canada, May 28-30, 2009
12. **Guangqiang He***, Lijie Ren, Guihua Zeng, Universal teleportation protocol based on continuous-variable graph states, Journal of quantum optics (2008): 34; The 13th national conference of quantum optics in China, Kunming
13. Asian Conference on Quantum Information Science 2006, September 1-4, 2006, Beijing, China
14. **Guangqiang He***, Jin Xiong, Yin Guo, Guihua Zeng, Quantum secure communication based on continuous variable EPR entangled pairs, Journal of quantum optics (2006), 12: 42; The 12th national conference of quantum optics in China, Nanchang

Patents (* corresponding author)

1. Zeyuan Shen, Junjun Xiao, **Guangqiang He**, Guihua Zeng, “Continuous variable quantum key distribution system and its synchronization method”, Chinese Invention Patent, No.201210181340.X
2. Zeyuan Shen, Junjun Xiao, Wenchao Dai, **Guangqiang He**, Guihua Zeng, “Continuous variable quantum key distribution system and its phase compensation method”, Chinese Invention Patent, No.201210310637.1
3. Jian Fang, Duan Huang, **Guangqiang He** and Guihua Zeng, “Implementation method of polarization compensation of CV QKD system”, Chinese Invention Patent, No. 201210389008.2
4. **Guangqiang He***, Guihua Zeng, Wenjie Zeng, Nanrun Zhou, “An quantum identification system based on polarization modulation”, Chinese Invention Patent, No. ZL200410017011.7
5. **Guangqiang He***, Guihua Zeng, “An quantum identification system based on phase modulation”, Chinese Invention Patent, No. ZL200410067582.1