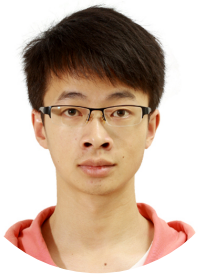

Longzhu **Cen**

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"Keep trying the right things."

Education

HIT(Harbin Institute of Technology) — *Harbin, China*

MSc in Physics — *Sep. 2016 - PRESENT*

- Majored in Optics

HIT(Harbin Institute of Technology) — *Harbin, China*

B.S. in Physics — *Sep. 2012 - Jul. 2016*

- Majored in Optical Information Science And Technology

Research

- **System research and signal processing method of photon counting lidar based on Gm-APD**
- **Quantum metrology: super-resolution and super-sensitive optical interferometer**

Experience

Institute of New Photoelectric Technology(Prof. Yuan Zhao) — *Harbin, China*

National Defense Basic Scientific Research: Quantum measurement technology based on *** — *Jan. 2017 - PRESENT*

Research assistant

- Participate in the feasibility demonstration at proposal stage of the project, including the preliminary system design.
- Constructed the experimental system, produced the light source of requisite quantum state.

National Natural Science Foundation of China (61701139): Enhancing the angular resolution of micro rotation measurement by Z detection method — *Apr. 2016 - PRESENT*

Research assistant

- Designed the measurement scheme for micro rotation measurement based on optical interferometer.
- Researched the angular resolution enhancing effect of Z detection method and the impact of experimental imperfect factors.
- Designed and implemented the experimental scheme, solved the alignment problem of weak light beams.

Undergraduate research: Enhancing the estimation accuracy of Stokes parameters by quantum entanglement — *Dec. 2015 - Jun. 2016*

Researcher

- Developed the quantum description of measurement process performed by a polarimetry laser radar.
- Researched means of inducing quantum entanglement into polarimetroy system which aimed at enhancing the estimation accuracy of Stokes parameters.

Publications

State preparation and detector effects in quantum measurements of rotation with circular polarization-entangled photons and photon counting.

Physical Review A 96, no. 5 (2017): 053846. — *2017*

Longzhu Cen, Zijing Zhang, Jiandong Zhang, Shuo Li, Yifei Sun, Linyu Yan, Yuan Zhao, and Feng Wang.

Improved resolution and sensitivity of angular rotation measurement using entangled coherent states.

Optics Communications 403 (2017): 92-96. — *2017*

Zijing Zhang, Tianyuan Qiao, Jie Song, Longzhu Cen, Jiandong Zhang, Shuo Li, Linyu Yan, Yuan Zhao, and Feng Wang.

Effects of imperfect elements on resolution and sensitivity of quantum metrology using two-mode squeezed vacuum state.

Optics Express 25, no. 21 (2017): 24907-24916. *2017*

Jiandong Zhang, Zijing Zhang, **Longzhu Cen**, Miao Yu, Shuo Li, Feng Wang, and Yuan Zhao.

Super-resolution and super-sensitivity of entangled squeezed vacuum state using optimal detection strategy.

Chinese Physics B 26, no. 9 (2017): 094204. *2017*

Jiandong Zhang, Zijing Zhang, **Longzhu Cen**, Shuo Li, Yuan Zhao, and Feng Wang.

Optimal quantum detection strategy for super-resolving angular-rotation measurement.

Applied Physics B 123, no. 5 (2017): 148. *2017*

Zijing Zhang, Tianyuan Qiao, **Longzhu Cen**, Jiandong Zhang, Feng Wang, and Yuan Zhao.

Ultra-sensitive and super-resolving angular rotation measurement based on photon orbital angular momentum using parity measurement.

Optics letters 41, no. 16 (2016): 3856-3859. *2016*

Zijing Zhang, Tianyuan Qiao, Kun Ma, **Longzhu Cen**, Jiandong Zhang, Feng Wang, and Yuan Zhao.

Super-resolving angular rotation measurement using binary-outcome homodyne detection.

Optics express 24, no. 16 (2016): 18477-18484. *2016*

Zijing Zhang, Tianyuan Qiao, Kun Ma, Jiandong Zhang, **Longzhu Cen**, Feng Wang, and Yuan Zhao.

Presentation

The Symposium on Free-Space Quantum Communication and Photon Detection *Shanghai, China*

Presenter for <Toward Performing Angular Rotating Measure of Heisenberg Scaling by Using the Four-photon Holland-Burnett State> *Nov. 2017*

- Introduced an novel strategy for angular measurement which realized Heisenberg scaling parameter estimation.

Skills

Programming C, Matlab, Latex
Software AutoCAD, Microsoft Office(Word, Powerpoint, Visio), Origin
Language Chinese(Native speaker), English(IELTS 5.5)