

# Qiongyuan Wu | [qiongyuan.wu@kcl.ac.uk](mailto:qiongyuan.wu@kcl.ac.uk)

## Research Associate, King's College London

Research interests: Non-equilibrium thermodynamics, Levito-/Opto-mechanics, Many-body dynamics, Rotational dynamics, Quantum Simulation

[Qiongyuan's Blog](#) [Qiongyuan Wu](#)

## Skills

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Software:	Fluent in Mathematica, Python, Matlab
Academic skills:	Publication of journal papers, conference presentation and grant application Translation from theoretical concepts to experimental validations Collaboration with local and international scholars
Administrative skills:	Tutoring / marking at the university (2017 - 2023) Experience of (co-)hosting school-scale events
Others:	Leading projects and project management Connections with world-renowned research groups

## Research Background

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- **Research Associate, King's College London** (Dec 2024 - Nov 2026)  
Topic: Stochastic Thermodynamics with Levitated Particles  
Grant: The Leverhulme Trust
- **Research Fellow, Queen's University Belfast** (Aug 2023 - Dec 2024)  
Topic: Non-Equilibrium Steady-States of Quantum many-body systems: uncovering universality and thermodynamics (QuamNESS)  
Grant: EPSRC
- **PhD in theoretical physics, Queen's University Belfast** (Jun 2019 - Dec 2023)  
Topic: Thermodynamic control and characterisation of levitated quantum systems  
Grant: The Leverhulme Trust
- **MPhil in theoretical physics, Queen's University Belfast** (Oct 2016 - Apr 2019)  
Topic: Testing the robustness of quantum correlations in multipartite systems
- **Exchange student at Queen's University of Belfast** Sep 2015 – Jun 2016
- **B.Sc in mathematics, East China University of Science and Technology** (Sep 2012 - Jun 2016)

## Grants / Awards

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- Second best presentation at Winter College on Optics, ICTP Trieste Feb 2020
- Santander Mobility Scholarship Nov 2017

## Publication list

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- [1] R. Muffato, T. S. Georgescu, [...], **Q. Wu**, et al. **Feb. 2025**. "Generation of classical non-Gaussian states by squeezing a thermal state into nonlinear motion of levitated optomechanics". In: *Phys. Rev. Res.* 7 (1), p. 013171.
- [2] **Q Wu**, D A Chisholm, et al. **Sept. 2024**. "Squeezing below the ground state of motion of a continuously monitored levitating nanoparticle". In: *Quantum Science and Technology* 9.4, p. 045038.
- [3] **Qiongyuan Wu**, Mario A. Ciampini, et al. **May 2023**. "Quantifying protocol efficiency: A thermodynamic figure of merit for classical and quantum state-transfer protocols". In: *Phys. Rev. Res.* 5 (2), p. 023117.

- [4] **Qiongyuan Wu** and Matteo Carlesso. **Mar. 2023**. “Non-equilibrium quantum thermodynamics of a particle trapped in a controllable time-varying potential”. In: *Quantum Sensing, Imaging, and Precision Metrology*. Ed. by Jacob Scheuer and Selim M. Shahriar. Vol. 12447. International Society for Optics and Photonics. SPIE, p. 1244714.
- [5] **Qiongyuan Wu**, Luca Mancino, et al. **Feb. 2022**. “Nonequilibrium Quantum Thermodynamics of a Particle Trapped in a Controllable Time-Varying Potential”. In: *PRX Quantum* 3 (1), p. 010322.
- [6] **Qiongyuan Wu**, Giovanni Barontini, et al. **Feb. 2020**. “Non-equilibrium thermodynamics of quantum processes assisted by transitionless quantum driving: the role of initial state preparation”. In: *arXiv e-prints*.