

Wojciech KOZŁOWSKI

Research and Teaching Experience

2019 onwards **QuTech, TU Delft**, Delft, Netherlands

- *Quantum networks, quantum repeaters, quantum information, quantum computing, network protocols, quantum computer architecture*
- Create and foster links with networking and software industries.
- **Teaching and supervision** of computer science and physics research students.

2012 – 2016 **University of Oxford**, Department of Physics, Oxford, UK

- *Quantum measurement, quantum trajectories, quantum optics, many-body strongly correlated systems, optical lattices, multipartite entanglement, quantum Zeno dynamics* with Dr. I. B. Mekhov.
- **Teaching** 1st and 3rd year undergraduates.

Sep 2013 **Les Houches Summer School 2013**, France.

2011 – 2012 **University of Cambridge**, Department of Physics, Cambridge, UK

- *Entanglement, gravitational waves, decoherence* with Prof. C. H. W. Barnes.

Jun-Sep 2011 **The Centre for Computational Science, UCL**, London, UK

- *Computational fluid dynamics using Lattice-Boltzmann*, with Prof. P. V. Coveney.

Jul-Aug 2010 **John Innes Centre**, Norwich, UK.

- *Calcium signalling simulations in plant root cells*, with Prof. R. J. Morris.

Other Work Experience

2016 – 2018 **Software Engineer (Developer) - Metaswitch**, London, UK

- Software development for layer 2 and layer 3 control plane protocols.
- Main project was the development of a Hardware Abstraction Layer (HAL).
- Led C++ education and adoption in the unit which recently began a move from C.

Education

2012 – 2016 **University of Oxford, St Catherine's College**, Oxford, UK
DPhil (PhD) in Atomic and Laser physics

Thesis: *Competition between weak quantum measurement and many-body dynamics in ultracold bosonic gases.*

Supervisor: Dr. Igor B. Mekhov

2008 – 2012 **University of Cambridge, Churchill College**, Cambridge, UK
M.Sci./M.A. (Hons) in Natural Sciences - **Class I**

Thesis: *Theoretical and Numerical study of Models of Entanglement for Neutrons.*

Supervisor: Prof. Crispin H. W. Barnes

2004 – 2008 **European School of Brussels I - 92.36% average**

Awards and Scholarships

2015 **Research Student Conference Fund**, Institute of Physics, UK.

2014 – 2015 **Leathersellers' Company Scholarship**, St. Catherine's College, Oxford, UK.

2013 – 2014 **Light Senior Scholarship**, St. Catherine's College, Oxford, UK.

2013 & 2015 **2xDepartmental Travel Award**, Clarendon Laboratory, Oxford, UK.

2013 & 2015 **3xGraduate Expenses Fund**, St. Catherine's College, Oxford, UK.

2012 **Microsoft Research Prize**, Department of Physics, Cambridge, UK.

2011 & 2012 **2xBullard Prize Scholarship**, Churchill College, Cambridge, UK.

2008 – 2012 **4xChurchill College Scholarship**, Churchill College, Cambridge, UK.

Technical Knowledge

Languages: C++, C, Rust, Python, Bash, Lisp, Java
Operating Systems: Unix (Linux), Windows

Additional Information

2014 – 2016 **Peer Support**, St. Catherine's College, Oxford, UK

- Part of University's welfare provision of day-to-day support from peers.
- 30 hours of formal training in effective listening and communication.

2013 – 2014 **MCR President**, St. Catherine's College, Oxford, UK

- Led and managed a nine person committee responsible for representing the college's postgraduates (300+ students) and organising social activities.
- Managed a budget of about £12,000 p.a. together with the treasurer.

2012 – 2013 **MCR Bar Manager**, St. Catherine's College, Oxford, UK

- Managed a team of about ten volunteers and paid workers during larger social events.
- Organised a volunteer scheme, which operates to this day, to help with bar duties.

Personal Interests

Weightlifting, running, collecting music CDs, Linux sysadmin, backpacking.

Publications

- [Kozłowski W.](#), Caballero-Benitez S. F., and Mekhov I. B., “Quantum State Reduction by Matter-Phase-Related Measurements in Optical Lattices”, **Scientific Reports** 7, Article number: 42597 (2017).
- [Kozłowski W.](#), “Competition between weak quantum measurement and many-body dynamics in ultracold bosonic gases”, **PhD thesis**, University of Oxford (2016).
- [Kozłowski W.](#), Caballero-Benitez S. F., and Mekhov I. B., “Non-Hermitian Dynamics in the Quantum Zeno Limit”, **Physical Review A** 94, 012123 (2016).
- Mazzucchi G., [Kozłowski W.](#), Caballero-Benitez S. F., and Mekhov I. B., “Collective dynamics of multimode bosonic systems induced by weak quantum measurement”, **New Journal of Physics**, 18(7):073017 (2016).
- Mazzucchi G.*, [Kozłowski W.*](#), Caballero-Benitez S. F., Elliott T. J., and Mekhov I. B., “Quantum Measurement-induced Dynamics of Many-Body Ultracold Bosonic and Fermionic Systems in Optical Lattices”, **Phys. Rev. A** 93, 023632 (2015).
* Equally contributing authors.
- [Kozłowski W.](#), Caballero-Benitez S. F., and Mekhov I. B., “Probing Matter-Field and Atom-Number Correlations in Optical Lattices by Global Nondestructive Addressing”, **Phys. Rev. A** 92, 013613 (2015).
- Elliott T. J., [Kozłowski W.](#), Caballero-Benitez S. F., and Mekhov I. B., “Multipartite Entangled Spatial Modes of Ultracold Atoms Generated and Controlled by Quantum Measurement”, **Phys. Rev. Lett.** 114, 113604 (2015).
- Elliott T. J.*, Mazzucchi G.*, [Kozłowski W.*](#), Caballero-Benitez S. F.*, and Mekhov I. B., “Probing and Manipulating Fermionic and Bosonic Quantum Gases with Quantum Light”, **Atoms** 2015 (special issue), 3(3), 392-406 (2015)
* Equally contributing authors.

- Granqvist E., Wysham D., Hazledine S., [Kozłowski W.](#), Sun J., Charpentier M., Martins T. V., Haleux P., Tsaneva-Atanasova K., Downie J. A., Oldroyd G. E., and Morris R. J., “*Buffering capacity explains signal variation in symbiotic calcium oscillations.*”, **Plant Physiol.** 160, 2300-10 (2012).

Contributions to Conferences

- **New Trends in Strongly Entangled Many-Body Systems 2015**, UCL, London, UK. [Kozłowski W.](#), Mazzucchi G., Elliott T. J., Caballero-Benitez S. F., and Mekhov I. B., *Quantum Measurement-Induced Dynamics, Entanglement, and State Control of Quantum Gases in Optical Lattices.*
- **Windsor 2015 CCPQ Workshop**, Cumberland Lodge, Windsor, UK. [Kozłowski W.](#), Mazzucchi G., Elliott T. J., Caballero-Benitez S. F., and Mekhov I. B., *Quantum Measurement-Induced Dynamics and State Control of Ultracold Bosons in Optical Lattices.*
- **JQC Mini-Conference 2015**, Durham University, Durham, UK. [Kozłowski W.](#), Mazzucchi G., Elliott T. J., Caballero-Benitez S. F., and Mekhov I. B., *Quantum Measurement-Induced Dynamics and State Control of Quantum Gases in Optical Lattices.*
- **Atomic Physics 2015**, Salve Regina University, RI, USA. [Kozłowski W.](#), Mazzucchi G., Elliott T. J., Caballero-Benitez S. F., and Mekhov I. B., *Quantum Measurement-Induced Dynamics and State Control of Quantum Gases in Optical Lattices.*
- **Les Houches Summer School 2013**, Ecole de Physique des Houches, France. [Kozłowski W.](#), and Mekhov I. B., *Beyond Classical Diffraction: Light Scattering from Quantum Gases in Optical Lattices.*
- **Young Atom Opticians 2013**, Midlands Ultracold Atoms Research Centre, University of Birmingham, UK. [Kozłowski W.](#), and Mekhov I. B., *Beyond Classical Diffraction: Light Scattering from Quantum Gases in Optical Lattices.*