

AQC 2024 Schedule

| Talk Title | Number | Name | Affiliation | Day | Time |
|--|-----------|--|-----------------------------------|---------|---------------|
| Welcome and announcements | 0 | Kendon, Viv | University of Strathclyde | Monday | 09:25 – 09:30 |
| Rydberg Blockade Revisited | Invited 3 | Natalie Pearson | PASQAL | Monday | 09:30 – 10:20 |
| Computational supremacy in quantum simulation | 11 | King, Dr. Andrew | D-Wave Systems Inc. | Monday | 10:20 – 10:45 |
| | | | | coffee | break |
| Entanglement growth from squeezing on the MPS manifold | 2 | Leontica, Sebastian | University College London | Monday | 11:15 – 11:40 |
| n-local catalysts to speed up quantum annealing | 3 | Ghosh, Dr. Roopayan | University College London | Monday | 11:40 – 12:05 |
| Approximate tensor network contractions for large unit-cells quantum annealers | 4 | Dziubyna, Anna Maria | Jagiellonian University in Kraków | Monday | 12:05 – 12:30 |
| | | | | lunch | break |
| Classical outperforms quantum reverse annealing in ferromagnetic mean-field models | 5 | Baldwin, Christopher | Michigan State University | Monday | 13:30 – 13:55 |
| Using multiple XX-catalysts in quantum annealing to efficiently solve MWIS problems | 6 | Nutricati, Luca Armando | University College London | Monday | 13:55 – 14:20 |
| Coherent Compressed Sensor for L0-Regularised Compressed Sensing | 7 | Mastiyage Don, Sudeera Hasaranga Gunathilaka | Tokyo Institute of Technology | Monday | 14:20 – 14:45 |
| | | | | coffee | break |
| | | | | | |
| | | | | Monday | 15:30 – 16:20 |
| Escaping local optima in quantum annealing with XX-couplings | 8 | Feinstein, Natasha | University College London | Monday | 09:55 – 10:20 |
| Gate-based counterdiabatic driving with complexity guarantees | 9 | van Vreumingen, Dyon | University of Amsterdam / QuSoft | Monday | 10:20 – 10:45 |
| Eigenpath traversal by Poisson-distributed phase randomisation | 10 | Cunningham, Joseph | | Monday | 16:20 – 16:45 |
| Civic Reception | | | Glasgow City Chambers | Monday | 18:00 – 19:30 |
| | | | | | |
| Coherence advancements for next-generation quantum technologies | Invited 2 | Alexander Whitarcar | D-Wave Systems Inc. | Tuesday | 09:30 – 10:20 |
| Quantum error mitigation in quantum annealing | 1 | Raymond, Dr Jack | D-Wave Systems Inc. | Tuesday | 10:20 – 10:45 |
| | | | | coffee | break |
| Three- and four-body switchable coupler for superconducting qubits to implement the parity encoding scheme | 12 | <i>Talk Cancelled</i> Miyazaki, Ryoji | NEC Corporation | Tuesday | 11:15 – 11:40 |
| Universal quantum computation using quantum annealing with the transverse-field Ising Hamiltonian | 13 | Imoto, Takashi | | Tuesday | 11:40 – 12:05 |

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| Tight Lieb-Robinson Bound for approximation ratio in Quantum Annealing | 14 | Braida, Arthur | | Tuesday | 12:05 – 12:30 |
| | | | | lunch | break |
| Coherent Flux Qubits for Quantum Annealing | 15 | López-núñez, David | Qilimanjaro/IFAE | Tuesday | 13:30 – 13:55 |
| A scalable 2-local architecture for quantum annealing of all-to-all Ising models | 16 | Palacios, Ana | Qilimanjaro Quantum Tech; University of Barcelona | Tuesday | 13:55 – 14:20 |
| Quantum simulation of 1D-fermionic systems with Ising Hamiltonians | 17 | Werner, Matthias | Qilimanjaro Quantum Tech; University of Barcelona | Tuesday | 14:20 – 14:45 |
| Efficient sampling in a glassy phase using a machine-learning-assisted Markov Chain Monte Carlo Method | 18 | Miyamoto, Seiya | | Tuesday | 14:45 – 15:10 |
| | | | | coffee | break |
| Scaling Advantage in Approximate Optimization with Quantum Annealing | Invited 1 | Daniel Lidar (remote) | USC | Tuesday | 15:40 – 16:30 |
| Poster session 1 (odd numbers present) | | | | | 16:30 – 18:00 |
| | | | | | |
| AVaQus project progress | Invited 4 | Pol Forn Díaz | IFAE, Spain | Wednesday | 09:30 – 10:20 |
| Amorphous quantum magnets in a two-dimensional Rydberg atom array | 19 | Vovorsh, Dr Joseph | PASQAL | Wednesday | 10:20 – 10:45 |
| | | | | coffee | break |
| Demonstration of weighted graph optimisation on a Rydberg atom array using local light-shifts | 20 | Pritchard, Prof. Jonathan | University Of Strathclyde | Wednesday | 11:15 – 11:40 |
| Parametric dependence of effective local fields of Kerr parametric oscillators | 21 | Yamaji, Dr. Tomohiro | NEC Corporation | Wednesday | 11:40 – 12:05 |
| Investigating scaling properties for quantum annealing to solve the Fermi-Hubbard model using the kinetic energy part as the driving Hamiltonian | 22 | Vyas, Kunal Prakash | Forshungszentrum Juelich | Wednesday | 12:05 – 12:30 |
| | | | | lunch | break |
| Free afternoon: lab tours (sign up for lab tours at registration desk) | | | Coaches to dinner leave 18:00 sharp | | 13:30 – 18:00 |
| Conference dinner | | Burrell Collection | Pollock Country Park | | 19:00 – 22:15 |
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| Quantum Simulation on a 3x3 Superconducting Qudit Lattice | Invited 5 | Sarah Muschinske | MIT | Thursday | 09:30 – 10:20 |
| Motivating continuous-time quantum optimisation without recourse to the adiabatic theorem | 23 | Banks, Robert | University College London | Thursday | 10:20 – 10:45 |
| | | | | coffee | break |
| A thermodynamic approach to optimization in complex quantum systems | 24 | Chancellor, Dr Nick | Newcastle University | Thursday | 11:15 – 11:40 |

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| Implementing a cooling protocol on a programmable quantum annealer | 25 | Humar, Gregor | Jožef Stefan Institute | Thursday | 11:40 – 12:05 |
| Evaluation and analysis of hybrid method using quantum annealing machine and non-quantum type Ising machine | 26 | Kikuchi, Dr. Shuta | Keio University | Thursday | 12:05 – 12:30 |
| | | | | lunch | break |
| Finding Spin Glass Ground States Using Multi-stage Quantum Walks | 27 | Hopkins, Mr Asa | University Of Strathclyde | Thursday | 13:30 – 13:55 |
| Advantage of multi-stage quantum walks over QAOA as approximations of quantum annealing | 28 | Gerblich, Mr Lasse | | Thursday | 13:55 – 14:20 |
| Parameter-range setting of annealing optimization based on local optimal solutions | 29 | Sugita, Yusuke | Hitachi, Ltd. | Thursday | 14:20 – 14:45 |
| | | | | coffee | break |
| Relaxed Momentum Annealing Theory and Applications | 30 | Okuyama, Takuya | | Thursday | 15:30 – 15:55 |
| Compressed space engineering for constrained combinatorial optimization | 31 | Shirai, Dr. Tatsuhiko | Waseda University | Thursday | 15:55 – 16:20 |
| Poster session 2 (even numbers present) | | | | | 16:30 – 18:00 |
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| Adiabatic Superconductor Logic: Recent Progress Toward Qubit Controllers | Invited 6 | Naoki Takeuchi (remote) | AIST | Friday | 09:30 – 10:20 |
| Building a Model Learning Method by Reducing the Number of Training Data for Factorization Machine with Annealing | 32 | Nakano, Mr. Mayumi | Keio University | Friday | 10:20 – 10:45 |
| | | | | coffee | break |
| A hybrid quantum-classical approach for inference on restricted Boltzmann machines | 33 | Kālis, Mārtiņš | University Of Latvia | Friday | 11:15 – 11:40 |
| Diverse solutions via quantum annealing leads to the discovery of diverse material compositions | 34 | Haba, Renichiro | | Friday | 11:40 – 12:05 |
| Optimized QUBO formulation methods for quantum computing | 35 | De Santis, Dario | Scuola Normale Superiore Di Pisa | Friday | 12:05 – 12:30 |
| | | | | lunch | break |
| Load balancing for high performance computing using quantum annealing | 36 | Rathore, Omer | Durham University | Friday | 13:30 – 13:55 |
| Quantum optimization with linear Ising penalties for customer data science | 37 | Mirkarimi, Puya | Durham University | Friday | 13:55 – 14:20 |
| Digitized Counterdiabatic Quantum Computing | 38 | Hegade, Narendra N. | Kipu Quantum | Friday | 14:20 – 14:45 |
| | | | | coffee | break |
| Panel session | | | | Friday | 15:30 – 16:30 |
| Conference close | | | | Friday | 16:30 – 17:00 |