

QUANTUM INFORMATION CONFERENCE

Girton College, Cambridge | 15-18 September

Four days of quantum information science, from foundations to applications

Keynote Invited Contributed Flash talk (10 min) Break Social event

TUESDAY 15

08:30-09:20	Registration
09:20-09:30	Opening Remarks
09:30-10:20 Seth Lloyd	The design of novel quantum algorithms
10:20-10:40 Barbara Soda	Trajectory-protected quantum computing
10:40-11:10 Tim Palmer	Rational Quantum Mechanics
11:10-11:40	TEA BREAK
11:40-12:10 Nicole Yunger Halpern	Time-reverse metrology
12:10-12:40 Stefan Weigert	Foils of Quantum Theory Defined by Alternative State-Update Rules
12:40-12:50 Mateo Spriet	Characterizing the Kirkwood-Dirac distribution via quantum conditional expectations
12:50-14:30	LUNCH
14:30-15:00 Matteo Lostaglio	Quantum algorithms for classical dynamics
15:00-15:20 Konstantinos Papatryfonos	Superradiance and static Bell tests in pilot-wave hydrodynamics
15:20-15:30 Jedrzej Burkat	The Power of Power-of-SWAP: Postselected Quantum Computation with the Exchange Interaction
15:30-16:00 Adrian Kent	Beyond Boundary Conditions: Generalised Theories of Quantum Cosmology
16:15	Drinks reception

WEDNESDAY 16

09:30-10:20 Robert Raussendorf	A hidden variable model for universal quantum computation with magic states on qubits
10:20-10:40 Andrew Zhao	Fermionic Insights into Measurement-Based Quantum Computation
10:40-11:10 Lorenzo Maccone	Tight Entropic Uncertainty Relations
11:10-11:40	TEA BREAK
11:40-12:10 Giulia Ferrini	Quantum advantage and classical simulation of continuous-variable quantum computers
12:10-12:30 Jack Davis	Basis-independent stabilizerness and maximally noisy magic states
12:30-12:40 Cameron Calcluth	Equivalence of continuous- and discrete-variable gate-based quantum computation
12:40-12:50 Yaqing Wang	Playing Bayesian games better with separable quantum states than with classical resources
12:50-14:30	LUNCH
14:30-15:00 Iman Marvian	Purifying Quantum States: New Protocols and Fundamental Limits
15:00-15:30 Rafal Demkowicz-Dobrzanski	Quantum metrology and quantum computing - a non-obvious, but fruitful relationship
15:30-15:40 Sanchit Srivastava	Logical Bell Inequalities for Wigner Negativity and Non-Stabilizer Resources
15:40-16:00 Jonte Hance	The Quantum Plumber's Problem
16:00-16:30	TEA BREAK
17:30-18:30	Public talk - Nicole Yunger Halpern
18:30-19:30	Wine mingle

THURSDAY 17

09:30-10:20 Gerard Milburn	Photonic Quantum Machine Learning
10:20-10:40 Ben Criger	The Circuit Gauge Operator Formalism and Applications
10:40-11:10 Andrew Jordan	Thermodynamic implications of measured quantum systems
11:10-11:40	TEA BREAK
11:40-12:10 Aephraim Steinberg	Quantum archeology: Asking quantum systems how they got to be where they are
12:10-12:30 Subhayan Roy Moulik	Building adjoint representations for tomography and compilation
12:30-12:40 Chiara Leadbeater	First-Quantized Electron Scattering Simulations
12:40-12:50 Saulo Moreira	Precision bounds for multiple currents in open quantum systems
12:50-14:30	LUNCH
14:30-15:00 Edwin Barnes	Robust control at the quantum speed limit from geometric space curves
15:00-15:20 Tamas Krivachy	Device-Independent Quantum Key Distribution with a Single Measurement per Site
15:20-15:30 Lara Suarez	Competing orders in excitonic insulators
15:30-15:40 James Moran	Near-optimal coherent state discrimination via continuously labelled non-Gaussian measurements
15:40-16:00 Christina Cirstoiu	Noisy quantum dynamics and the edge of classical simulations
16:00-17:30	Poster session
19:30	Gala dinner

FRIDAY 18

09:30-10:20 Sophia Economou	Photonic resource state factories: controlling matter qubits to produce useful states of light
10:20-10:40 Felix Binder	Learning from quantum jump trajectories
10:40-11:00 Yelena Guryanova	Cloning Quantum Channels
11:00-11:30	TEA BREAK
11:30-12:00 Jayne Thompson	Error mitigation for mid-circuit measurements and feedforward
12:00-12:20 Christopher Long	Optimal Hamiltonian control for variational quantum algorithms: on spin-qubit quantum processors
12:20-12:30 Scott Jones	A Unified Execution Substrate for Trapped-Ion Moving Qubit ISAs
12:30-12:40 Flash talk (TBC)	Title to be announced
12:40-14:30	LUNCH
14:30-15:00 Kieran Dalton	Modular 3D-Integrated Superconducting Quantum Devices
15:00-15:20 Philip Taranto	Singular value transformation for unknown quantum channels
15:20-15:30 Choy Boy	Energy landscapes of quantum algorithms in electronic structure and quantum machine learning
15:30-15:40 Harinarayanan M	Exact Finite-Time Thermalization via Quenching in Coupled Oscillators
15:40-16:00 Contributed talk (TBC)	Title to be announced
16:00-16:30	TEA BREAK