Nordita QEC timetable

Monday 16th June

| Time | Speaker | Talk |
|---|---|---|
| 9.00-9.15 | Organisers | Welcome |
| 9.15 – 11.00 | Joe Goodwin | Tutorial: Trapped ion quantum computing |
| 11.00-11.15 | | Announcements/roadmaps |
| 11.15-14.00 | Lunch | |
| 14.00-14.45 | Kaavya Sahay | Magic state cultivation on the folded surface code |
| 14.45-15.30 | Ben Criger | One-Bit Addition with the Smallest Interesting Colour Code |

Tuesday 17th June

| Time | Speaker | Talk |
|---|---|---|
| 9.15 – 11.00 | Antony Leverrier | Tutorial: QEC formalism and LDPC codes |
| 11.00-14.00 | Lunch | |
| 14.00-14.45 | Timo Hillmann | Single-shot and measurement-based quantum error correction via fault complexes |
| 14.45-15.30 | Stefan Krastanov | Finding the Best Entanglement Purification Circuits |
| 15.30-16.00 | | Break |
| 16.00-17.00 | | 15 minute contributed talks |
| | Surabhi Luthra | Unlocking early fault-tolerant quantum computing with mitigated magic dilution |
| | Gyorgy Geher | To reset, or not to reset -- that is the question |
| | Liam Veeder-Sweeney | QEC: Python Tools for Quantum Error Correction |
| | Arshpreet Maan | Correlated Decoding of Y Errors in QLDPC codes: BP Serial vs Parallel |

Wednesday 18th June

| Time | Speaker | Talk |
|---|---|---|
| 9.30 – 10.15 | Alexander Müller-Hermes | Fault-tolerant coding for quantum communication |
| 10.15-11.00 | Ted Yoder | A modular quantum computer based on bivariate bicycle codes |
| 11.00-14.00 | Lunch | |
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| 14.00-14.45 | Anthony Micciche | Optimizing compilation of error correction codes for 2xN quantum dot arrays and its NP-hardness |
| 14.45-15.30 | | 15 minute contributed talks |

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| | Ludwig Schmid | Classical Design Techniques for Fault-Tolerant Quantum Circuits |
| | Francesco Cesa | Fast and Error-Correctable Quantum RAM |
| | Eleanor Kneip | The Bivariate Bicycle Code for Qudits (BBQ Codes) |
| | Tenzan Araki | Space-time tradeoff in networked virtual distillation |
| 18.00 | | Conference dinner |

Thursday 19th June

| Time | Speaker | Talk |
|---|---|---|
| 9.30 – 11.15 | Simon Evered | Tutorial: Neutral atom quantum computing |
| 11.15– 14.00 | Lunch | |
| 14.00-14.45 | Alex Kubica | Reducing the overhead of QEC |
| 14.45-15.45 | Whole workshop | Roadmaps |

Friday 20th – midsommar

Monday 23th June

| Time | Speaker | Talk |
|---|---|---|
| 9.00-9.15 | Organisers | Welcome |
| 9.15 – 11.00 | Armanda Quintavalle | Tutorial: Error-corrected logic gates |
| 11.00-11.15 | | Announcements/roadmaps |
| 11.15-13.30 | Lunch | |
| 13.30-14.15 | Alec Eickbusch | Demonstrating dynamic surface codes |
| 14.15-15.00 | Leonid Pryadko | New families of single-shot quantum LDPC codes |
| 15.30-16.30 | Steve Girvin | Colloquium. Quantum Signal Processing: Making Schrödinger Cats and Other Exotic States of Microwave Photons<br>Albano Hus 2: C2207 - Auditorium 4 |

Tuesday 24th June

| Time | Speaker | Talk |
|---|---|---|
| 9.15 – 11.00 | Giovanna Tancredi | Tutorial: Superconducting qubits |
| 11.00-14.00 | Lunch | |
| 14.00-14.45 | Anton Frisk Kockum | Architecture considerations for superconducting quantum processors |
| 14.45-15.30 | Stefano Paesani | A loss-tolerant photonic qubit |
| 15.30-16.00 | | Break |

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| 16.00-17.00 | | 15 minute contributed talks |
| | Xanda Kolesnikow | Protected phase gate for the 0-π qubit using its internal modes |
| | Aislin Wells | Erasure Fluxonium: Tailoring Errors for Optimal Performance in a Quantum Error-Correcting Code |
| | Ilya Besedin | Realizing Lattice Surgery on Two Distance-Three Repetition Codes with Superconducting Qubits |
| | Huyen Do | Are decoders symmetric? |

Wednesday 25th June

| Time | Speaker | Talk |
|---|---|---|
| 9.30 – 11.15 | Aleksander Kubica | Tutorial: Decoding problem and stat mech mappings |
| 11.15-14.00 | Lunch | |
| 14.00-14.45 | Guillaume Dauphinais | A high-level view of Xanadu's photonic architecture |
| 14.45-15.30 | Michael Kastoryano | A new push for self correction? |
| 18.00 | | Conference dinner |

Thursday 26th June

| Time | Speaker | Talk |
|---|---|---|
| 9.30-11.15 | Robin Harper | Tutorial: Benchmarking noise in QEC experiments |
| 11.15-11.30 | | |
| 11.30-12.00 | | 15 minute contributed talks |
| | Basudha Srivastava | Exact results on finite size corrections for surface codes tailored to biased noise |
| | Giacomo Fregona | Codes and decoders at low error weight |
| 12.00-12.30 | Whole workshop | Roadmaps |
| 12.30- | Lunch | |
| | Free afternoon | |

Friday 27th June

| Time | Speaker | Talk |
|---|---|---|
| 9.00-10.0 | Volodymyr Sivak | Quantum error correction below the surface code threshold |
| 10.00-10.15 | | Break |
| 10.15 – 11.00 | Sergiy Denysov | Experimental Detection of Dissipative Quantum Chaos |
| 11.00-12.00 | | 15 minute contributed talks |

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| | Mark Turner | Scalable decoding protocols for fast transversal logic in the surface code |
| | Moritz Lange | Machine Learning Approaches to Surface Code Decoding: From Neural Matching to Sequential Graph Models |
| | Tomasz Andrzejewski | Fault tolerant quantum computation through code teleporatation |
| | Ioana Moflic | On the Constant Depth Implementation of Pauli Exponentials |
| 12.00- | Lunch | |
| | Free afternoon | |

Monday 30th June

| Time | Speaker | Talk |
|---|---|---|
| 9.00-9.15 | Organisers | Welcome |
| 9.15 – 11.00 | Maximilian Rimbach-Russ | Tutorial: Spin qubits |
| 11.00-14.00 | Lunch | |
| 14.00-14.45 | Alexandru Paler | Computing at scale: from measurement-free error correction to extremely large quantum circuits |
| 15.00 | Nordita ”Fika” (coffee break) | 6th floor |

Tuesday 1st July

| Time | Speaker | Talk |
|---|---|---|
| 9.15 – 11.00 | Yvonne Gao | Tutorial: Bosonic QEC |
| 11.00-14.00 | Lunch | Lunch |
| 14.00-14.45 | Delphine Martres | Floquet engineering for QEC codestate preparation |
| 14.45-15.30 | Victor Albert | Letting the tiger out of its cage: bosonic coding without concatenation |
| 15.30-16.00 | | Break |
| 16.00-17.15 | 5x | 15 minute contributed talks |
| | Harry Putterman | Hardware-efficient quantum error correction using concatenated bosonic qubits |
| | Mohammad Nobakht | Improved Noise Reduction in Continuous-Variable Quantum Systems |
| | Kaustav Chatterjee | All-optical quantum memory using bosonic quantum error correction codes |
| | Aleksandr Dorogov | Advancing bosonic cQED architecture: towards fast frequency tunability for quantum simulation and microwave lasing |

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|---|---|---|
| | Jesper Lind-Olsen | Two qubit entangling gates on dissipatively stabilized multimode Schrödinger cat states |

Wednesday 2nd July

| Time | Speaker | Talk |
|---|---|---|
| 9.30 – 11.15 | Peter van Loock | Tutorial: Photonic QC |
| 11.15 -11.30 | | Break |
| 11.30-12.15 | Emil Østergaard | Fault-Tolerant Continuous Variable Quantum Computing |
| 12.15- | Lunch | |
| | Free afternoon | |

Thursday 3rd July

| Time | Speaker | Talk |
|---|---|---|
| 9.30-10.15 | Giulia Ferrini | Classical simulation of bosonic-encoded quantum computations |
| 10.15 – 11.00 | Kae Nemoto | Invited seminar |
| 11.00-14.00 | Lunch | Lunch |
| 14.00-14.45 | Matthias Löbl | Variants of a Union-Find decoder |
| 14.45-15.30 | Kenneth Brown | Time Dimension of Fault Tolerance |
| 15.30-16.00 | | Break |
| 16.00-16.30 | | 15 minute contributed talks |
| | Constance Laine | Qubit measurement for QEC: what can superconducting and spin qubits learn from each other? |
| | Anthony Micciche | Quantum Hamlets: Distributed Compilation of Large Algorithmic Graph States |
| 16.30-17.15 | Ben Brown | Universal quantum computing in two dimensions without getting tied in knots |
| 18.00 | | Conference dinner |

Friday 4th July

| Time | Speaker | Talk |
|---|---|---|
| All day | Discussions | No talks |
| 11.00-14.00 | Lunch | |
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