

Australia-Japan Workshop on Multi-user Quantum Networks 2014

October 22 - 24, 2014, UTS, Sydney, Australia

<http://quantum-lab.org/ajw2014.php>

Organising Chairs: Runyao Duan (QCIS, UTS), Masahito Hayashi (Nagoya University & CQT, NUS)

AJW2014 Program

Venue: Lecture Theatre CBo2.04.11, UTS City Broadway Campus

Reception: 08:30--09:20, Wednesday, October 22, 2014

Opening Remarks: 09:20--09:30, Wednesday, October 22, 2014

October 22 Wednesday	October 23 Thursday	October 24 Friday
09:30--10:15 Mingsheng Ying	09:30--10:15 Masahito Hayashi	09:30--10:15 Gavin Brennen
10:15-10:40 Tea Break	10:15-10:40 Tea Break	10:15-10:40 Tea Break
10:40-11:25 Keisuke Fujii	10:40-11:25 Marco Tomamichel	10:40-11:25 Ryutaroh Matsumoto
11:25-12:15 Andrew Darmawan	11:25-12:15 Tomohiro Ogawa	11:25-12:15 Min-Hsiu Hsieh
12:15-14:30 Group Photo Lunch Break	12:15-14:30 Lunch Break	12:15-14:30 Lunch Break
14:30-15:15 Joe Fitzsimons	14:30-15:15 Harumichi Nishimura	14:30-15:15 Simon Burton
15:15-16:00 Tomoyuki Morimae	15:15-16:00 Dominic Berry	15:15-16:00 Runyao Duan
16:00-16:30 Tea Break	16:00-16:30 Tea Break	16:00-16:30 Tea Break
16:30-17:15 Takeshi Koshihara	16:30-17:15 Michael Bremner	16:30-17:15 Arne Laucht
17:15-18:00 Free Discussions	17:15-18:00 Free Discussions	17:15-18:00 Free Discussions

October 22, Wednesday Morning, Session Chair: Masahito Hayashi

Mingsheng Ying (UTS)

Quantum recursion and second quantisation

Keisuke Fujii (Kyoto University)

Measurement-based quantum computation using thermal states of many-body Hamiltonian

Andrew Darmawan (The University of Sydney)

Graph states as ground states of two-body frustration-free Hamiltonians

October 22, Wednesday Afternoon, Session Chair: Runyao Duan

Joe Fitzsimons (Singapore University of Technology and Design & CQT, NUS)

Blind and verifiable quantum computation

Tomoyuki Morimae (Gunma University)

Developments of blind quantum computing

Takeshi Koshihara (Saitama University)

Private information retrieval via blind quantum computation

October 23, Thursday Morning, Session Chair: Mingsheng Ying

Masahito Hayashi (Nagoya University & CQT, NUS)

Generalized entropies and quantum security

Marco Tomamichel (The University of Sydney)

Strong converse bounds for quantum communication

Tomohiro Ogawa (The University of Electro-communications)

Quantum relative Renyi relative entropies and strong converse theorems

October 23, Thursday Afternoon, Session Chair: Joe Fitzsimons

Harumichi Nishimura (Nagoya University)

Generalized quantum Arthur-Merlin games

Dominic Berry (Macquarie University)

Exponential improvement in precision for simulating sparse Hamiltonians

Michael Bremner (UTS)

Towards a proof of the classical intractability of quantum simulation

October 24, Friday Morning, Session Chair: Michael Bremner

Gavin Brennen (Macquarie University)

Quantum algorithms for complex and real temperature partition functions

Ryutaroh Matsumoto (Tokyo Institute of Technology)

Recent progress in quantum ramp secret sharing

Min-Hsiu Hsieh (UTS)

The learnability of quantum measurements

October 24, Friday Afternoon, Session Chair: Tomohiro Ogawa

Simon Burton (The University of Sydney)

Error correction in a Fibonacci anyon code

Runyao Duan (UTS)

Quantum unambiguous capacity

Arne Laucht (University of New South Wales)

Single donor qubits in ^{28}Si : New benchmarks for solid state qubits

Acknowledgements

The Australia-Japan workshop on Multi-user Quantum Networks 2014 focuses on the recent advances in quantum computing and quantum information processing. It aims at providing a forum for Australian and Japanese researchers in these fields to exchange their latest research results. All talks of the workshop are by invitation only. This workshop is jointly organised by [Quantum Computation Laboratory \(QCL\)](#) at the [Centre for Quantum Computation & Intelligent Systems \(QCIS\)](#), [University of Technology, Sydney \(UTS\)](#), Australia, and Japanese research fund [Grant-in-Aid for Scientific Research \(A\) "Project on Multi-user Quantum Network"](#) in cooperation with Japanese research fund [Grant-in-Aid for Scientific Research \(A\) "Deepening Quantum Protocol Theory"](#).