

Dear colleague,

The TQC conference is going into its 13th year and will be held in Sydney, Australia during July 16th to 18th, 2018. Please consider the call for papers below and circulate among your colleagues and students.

Best wishes,

Stacey Jeffery (program committee chair)

Marco Tomamichel (local organizing committee chair)

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### CALL FOR PAPERS

The 13th Conference on the Theory of Quantum Computation,  
Communication, and Cryptography  
---- TQC 2018 ----

Centre for Quantum Software and Information  
University of Technology Sydney  
Sydney, Australia  
July 16-18, 2018

For further information, please see [www.tqc2018.org](http://www.tqc2018.org).

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This is the thirteenth in a series of conferences that aims to bring together the leading researchers in the areas of quantum computation, quantum communication and quantum cryptography. TQC covers all theoretical aspects of quantum information.

Areas of interest include, but are not restricted to:

- \* quantum algorithms
- \* models of quantum computation
- \* quantum complexity theory
- \* simulation of quantum systems
- \* quantum cryptography
- \* quantum communication
- \* quantum information theory
- \* quantum estimation and measurement
- \* intersection of quantum information and condensed-matter theory

- \* quantum coding theory
- \* fault-tolerant quantum computing
- \* entanglement theory

Important dates:

- \* Paper/Talk/Early-Poster submission deadline: March 20, 2018
- \* Decision notification: May 10, 2018
- \* Final manuscript deadline: May 24, 2018
- \* Late-Poster submission deadline: June 8, 2018
- \* Conference: July 16-18, 2018

Two tracks: Conference (talk + proceedings) and Workshop (talk only). As the goal of TQC is to bring together researchers on all aspects of quantum information, submissions are solicited for two tracks:

- \* Conference (talk + proceedings): Submissions to this track must be original papers that have not previously appeared in published form. Accepted papers will be presented orally at the conference and will appear in the conference proceedings. The PC will target a minimum of 10 articles to be published in the proceedings.
- \* Workshop (talk only): We solicit submissions for talk-only papers; accepted submissions will be presented orally at the conference but will not appear in the proceedings. This track allows authors to publish their work elsewhere and accepts already published material.

Depending on submissions received, preference may be given to submissions to the Conference track. In recent years the overall acceptance rate for all papers submitted to TQC has been around 25%.

Programme committee:

- \* Miriam Backens (University of Oxford)
- \* Somshubhro Bandyopadhyay (Bose Institute, Calcutta)
- \* Aleksandrs Belovs (University of Latvia)
- \* Dominic Berry (Macquarie University)
- \* Mario Berta (Imperial College)
- \* Ben Brown (University of Sydney)
- \* Andrew Childs (University of Maryland)
- \* Elizabeth Crosson (California Institute of Technology)
- \* David Elkouss (QuTech, TU Delft)
- \* Philippe Faist (Caltech)

- \* Steven Flammia (University of Sydney)
- \* Keisuke Fujii (Kyoto University)
- \* François Le Gall (Kyoto University)
- \* Raul Garcia-Patron (ULB)
- \* David Gosset (IBM)
- \* David Gross (University of Cologne)
- \* Masahito Hayashi (Nagoya University/CQT NUS)
- \* Peter Høyer (University of Calgary)
- \* Rahul Jain (CQT NUS)
- \* Stacey Jeffery (chair; QuSoft, CWI)
- \* Robin Kothari (Microsoft Research)
- \* Anthony Leverrier (Inria)
- \* Ke Li (Harbin Institute of Technology)
- \* Laura Mančinska (QMATH, University of Copenhagen)
- \* Matthew McKague (Queensland University of Technology)
- \* Ashley Montanaro (University of Bristol)
- \* Pradeep Sarvepalli (IIT Madras)
- \* Jamie Sikora (PI)
- \* Fang Song (Portland State University)
- \* Thomas Vidick (California Institute of Technology)
- \* Michael Walter (QuSoft, University of Amsterdam)
- \* Beni Yoshida (PI)
- \* Henry Yuen (Berkeley/Toronto)

Local organizing committee (UTS, Centre for Quantum Software and Information):

- \* Marco Tomamichel (chair, TQC 2018)
- \* Christopher Ferrie (chair, satellite workshop)
- \* Min-Hsiu Hsieh (co-chair)
- \* Michael Bremner
- \* Runyao Duan

Steering committee:

- \* Anne Broadbent (uOttawa)
- \* Wim van Dam (UCSB)
- \* Aram Harrow (MIT)
- \* Yasuhito Kawano (NTT, Tokyo)
- \* Michele Mosca (IQC, Waterloo and Perimeter Institute)
- \* Martin Roetteler (Microsoft Research)
- \* Simone Severini (UCL)
- \* Mark M. Wilde (LSU)

In addition to TQC, QSI is also hosting a satellite workshop on Quantum Software and Machine Learning immediately following it, July 19-20. The scope of the satellite workshop will include the following: (1) quantum software and programming environments; (2) the application of quantum algorithms to solve problems in machine learning; (3) the application of machine learning algorithms to currently challenging and unsolved problems in quantum information and many-body physics problems; and (4) the application of ideas in condensed matter physics and quantum computation to solve and understand problems in machine learning and artificial intelligence.

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