

TQC 2011 – Conference Program

Universidad Complutense de Madrid
Prof. Botella Lecture Room, Faculty of Medicine
Ciudad Universitaria - Madrid, Spain
May 24-26, 2011
<http://gcc.ls.fi.upm.es/tqc2011/>

Monday, May 23:

Arrival and hotel check-in.

Tuesday, May 24:

8:00-9:20 **Registration**

9:20-9:30 **Welcoming addresses**

Morning session: Quantum Cryptography I

9:30-10:30 **Nicolas Gisin (invited talk)**
Futures of Quantum Communication: Device-Independent QKD, Quantum Networks and bi-locality

10:30-11:00 **Jonathan Silman**, Andre Chailloux, Nati Aharon, Iordanis Kerenidis,
Stefano Pironio and Serge Massar
Mistrustful quantum cryptography in a device-independent setting

11:00-11:30 **Break**

11:30-12:00 **Marco Tomamichel**, Charles Ci Wen Lim, Renato Renner, Nicolas Gisin
Towards a tight finite key analysis for BB84

12:00-12:30 **Lluís Masanes, Stefano Pironio and Antonio Acín**
Secure device-independent quantum key distribution with causally independent measurement devices

12:30-14:00 **Lunch**

Tuesday, May 24:

Afternoon session: Quantum Informtion I

- 14:00-15:00** **Héctor Bombín (invited talk)**
Structure of 2D Topological Stabilizer Codes
- 15:00-15:30** Frederic Dupuis, **Jan Florjanczyk**, Patrick Hayden and Debbie Leung
The locking-decoding frontier for generic dynamics
- 15:30-16:00** **Break**
- 16:00-16:30** **Koenraad Audenaert**
Telescopic relative entropy
- 16:30-17:00** **Iman Marvian** and Robert Spekkens
A generalization of Noether's theory and the information-theoretic approach to the study of symmetric dynamics
- 17:00-18:00** **Rump session**

Wednesday, May 25:

Morning session: Quantum Algorithms I

- 9:30-10:30** **Umesh Vazirani (invited talk)**
TBD
- 10:30-11:00** **Gorjan Alagic** and Stephen Jordan
Approximating the Turaev-Viro invariant of mapping tori is complete for one clean qubit
- 11:00-11:30** **Break**
- 11:30-12:00** **Ben Reichardt**
Span-program-based quantum algorithm for evaluating unbalanced formulas
- 12:00-12:30** **Matthew McKague**
Self-testing graph states
- 12:30-14:00** **Lunch**

Wednesday, May 25:

Afternoon session: Quantum Cryptography II

- 14:00-15:00** **Mio Murao (invited talk)**
"Globalness" of unitary operations on quantum information
- 15:00-15:30** Daniel Cavalcanti, **Nicolas Brunner**, Paul Skrzypczyk, Alejo Salles and Valerio Scarani
Large violation of Bell inequalities using both particle and wave measurements
- 15:30-16:00** **Break**
- 16:00-16:30** **Lawrence Ioannou** and Michele Mosca
Unconditionally-secure and reusable public-key authentication
- 16:30-17:00** **Anthony Leverrier** and Philippe Grangier
Long distance quantum key distribution with continuous variables
- 17:00-19:30** **Poster session**

Thursday, May 26:

Morning session: Quantum Algorithms II

- 9:30-10:30** **Hans Briegel (invited talk)**
Projected simulation for artificial intelligence
- 10:30-11:00** **David Meyer** and James Pommersheim
Multi-query quantum sums
- 11:00-11:30** **Break**
- 11:30-12:00** **Juerg Wullschleger**
Bitwise quantum min-entropy sampling and new lower bounds for random access codes
- 12:00-12:30** **Mehdi Mhalla**, Mio Murao, Simon Perdrix, Masato Someya, Peter Turner
Which graph states are useful for quantum information processing?

12:30-14:00 Lunch

Thursday, May 26:

Afternoon session: Quantum Information II

14:00-15:00 Tobias Osborne (invited talk)

The continuum limit of a quantum circuit: variational classes for quantum fields

15:00-15:30 Break

15:30-16:00 Vaibhav Madhok and Animesh Datta

Quantum discord in quantum information theory - from strong subadditivity to the Mother protocol

16:00-16:30 David Lyons, Scott Walck and Curt Cenci

Local unitary group stabilizers and entanglement for multiqubit symmetric states

16:30-16:45 Closing