

10th Conference on the Theory of Quantum Computation, Communication and Cryptography

TQC'15, May 20–22, 2015, Brussels, Belgium

Edited by

Salman Beigi
Robert König



Editors

Salman Beigi
Institute for Research in
Fundamental Sciences
Tehran, Iran
salman.beigi@gmail.com

Robert König
Institute for Advanced Study
and Zentrum Mathematik
Technische Universität München
Garching, Germany
robert.koenig@tum.de

ACM Classification 1998

E.3 Data Encryption, E.4 Coding and Information Theory, F Theory of Computation

ISBN 978-3-939897-96-5

Published online and open access by

Schloss Dagstuhl – Leibniz-Zentrum für Informatik GmbH, Dagstuhl Publishing, Saarbrücken/Wadern, Germany. Online available at <http://www.dagstuhl.de/dagpub/978-3-939897-96-5>.

Publication date

November, 2015

Bibliographic information published by the Deutsche Nationalbibliothek

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at <http://dnb.d-nb.de>.

License

This work is licensed under a Creative Commons Attribution 3.0 Unported license (CC-BY 3.0): <http://creativecommons.org/licenses/by/3.0/legalcode>.



In brief, this license authorizes each and everybody to share (to copy, distribute and transmit) the work under the following conditions, without impairing or restricting the authors' moral rights:

- Attribution: The work must be attributed to its authors.

The copyright is retained by the corresponding authors.

Digital Object Identifier: 10.4230/LIPICs.TQC.2015.i

ISBN 978-3-939897-96-5

ISSN 1868-8969

<http://www.dagstuhl.de/lipics>

■ Contents

Oracles with Costs <i>Shelby Kimmel, Cedric Yen-Yu Lin, and Han-Hsuan Lin</i>	1
The Resource Theory of Steering <i>Rodrigo Gallego and Leandro Aolita</i>	27
How Many Quantum Correlations Are Not Local? <i>Carlos E. González-Guillén, C. Hugo Jiménez, Carlos Palazuelos, and Ignacio Villanueva</i>	39
The Spin-2 AKLT State on the Square Lattice is Universal for Measurement-based Quantum Computation <i>Tzu-Chieh Wei and Robert Raussendorf</i>	48
Quantum Capacity Can Be Greater Than Private Information for Arbitrarily Many Uses <i>David Elkouss and Sergii Strelchuk</i>	64
Semidefinite Programs for Randomness Extractors <i>Mario Berta, Omar Fawzi, and Volkher B. Scholz</i>	73
New Constructions for Quantum Money <i>Marios Georgiou and Iordanis Kerenidis</i>	92
Decoherence in Open Majorana Systems <i>Earl T. Campbell</i>	111
On the Closure of the Completely Positive Semidefinite Cone and Linear Approximations to Quantum Colorings <i>Sabine Burgdorf, Monique Laurent, and Teresa Piovesan</i>	127
Making Existential-unforgeable Signatures Strongly Unforgeable in the Quantum Random-oracle Model <i>Edward Eaton and Fang Song</i>	147
A Universal Adiabatic Quantum Query Algorithm <i>Mathieu Brandeho and Jérémie Roland</i>	163
Quantum Enhancement of Randomness Distribution <i>Raul Garcia-Patron, William Matthews, and Andreas Winter</i>	180
Implementing Unitary 2-Designs Using Random Diagonal-unitary Matrices <i>Yoshifumi Nakata, Christoph Hirche, Ciara Morgan, and Andreas Winter</i>	191
Round Elimination in Exact Communication Complexity <i>Jop Briët, Harry Buhrman, Debbie Leung, Teresa Piovesan, and Florian Speelman</i>	206
On the Robustness of Bucket Brigade Quantum RAM <i>Srinivasan Arunachalam, Vlad Gheorghiu, Tomas Jochym-O'Connor, Michele Mosca, and Priyaa Varshinee Srinivasan</i>	226
Interferometric Versus Projective Measurement of Anyons <i>Claire Levaillant and Michael Freedman</i>	245