

# Preface

The Conference on the Theory of Quantum Computation, Communication, and Cryptography (TQC) is an annual meeting on theoretical aspects of quantum information processing. The goal of the conference is to foster developments in this rapidly growing, interdisciplinary field by providing a forum for the presentation and discussion of original research.

The sixth iteration of TQC was held during May 24–26, 2011, at the Universidad Complutense de Madrid, Spain. It included invited talks, contributed talks, and a poster session. Authors of selected contributed talks were invited to submit a paper to these proceedings.

TQC 2011 would not have been possible without the contributions of numerous individuals and organizations, and we sincerely thank them for their support.

In putting together the scientific program, we were very grateful for the hard work and advice of the Program Committee, listed herein. We also appreciate the help of the following additional reviewers: Abolfazl Bayat, Dan Browne, Bill Coish, Greg Kuperberg, Frédéric Magniez, Iman Marvian, Matthew McKague, Tomoyuki Morimae, Daniel Nagaj, Varun Narasimhachar, Marcin Pawłowski, Jérémie Roland, Praadeep Sarvepalli, Tommaso Tufarelli, Thomas Vidick, Tsu-Chieh Wei, and Shigeru Yamashita.

The logistics of the conference were expertly managed by the Organizing Committee, also listed herein. Special thanks goes to Inés Escribano and the local organization team from the Quantum Information Technologies in Madrid (QUITEMAD) group for their efforts to make the conference a success.

We would like to thank the invited speakers for their contributions to the program. The six invited talks delivered were on “*Futures of Quantum Communication: Device-Independent QKD, Quantum Networks and Bi-locality*” by Nicolas Gisin, “*Structure of 2D Topological Stabilizer Codes*” by Hector Bombín, “*Quantum Hamiltonian Complexity*” by Umesh Vazirani, “*Globalness of Unitary Operations on Quantum Information*” by Mio Murao, “*Projected Simulation for Artificial Intelligence*” by Hans Briegel and “*The Continuum Limit of a Quantum Circuit: Variational Classes for Quantum Fields*” by Tobias Osborne.

We would like to thank the members of the Conference Series Steering Committee, Wim van Dam, Yasuhito Kawano, Michele Mosca, and Vlatko Vedral, for their important advice.

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Finally, we would like to thank Springer for publishing the proceedings of TQC in the *Lecture Notes in Computer Science* series.

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