21st Conference on the Theory of Quantum Computation, Communication and Cryptography

TQC 2026, August 31–September 4, 2026, Sherbrooke, Québec, Canada

Edited by

Rotem Arnon

Aram W. Harrow

Editors

Rotem Arnon
EPFL, Lausanne, Switzerland
rotem.arnon@epfl.ch

Aram W. Harrow
MIT, Cambridge, MA, USA
aram@mit.edu

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Preface

The 21th Conference on The Theory of Quantum Computation, Communication and Cryptography (TQC) was hosted by Sherbrooke University, Québec, Canada, from August 31 to September 4, 2026.

TQC is a leading annual international conference for students and researchers working in the theoretical aspects of quantum information science. The scientific objective of TQC is to bring together the theoretical quantum information science community to present and discuss the latest advances in the field. Areas of interest for TQC include, but are not restricted to: quantum algorithms and models of quantum computation, quantum information theory, quantum entanglement and foundations, quantum cryptography, quantum communication, quantum complexity, quantum error correction and fault-tolerant quantum computing, tomography, learning, and many-body theory, and other topics in quantum computing (including intersections with the theory of condensed-matter physics and machine learning).

A list of the previous editions of TQC follows:

- TQC 2025, Indian Institute of Science, Bengaluru, India
- TQC 2024, Okinawa Institute for Science and Technology, Japan
- TQC 2023, University of Aveiro, Portugal
- TQC 2022, University of Illinois at Urbana-Champaign, USA
- TQC 2021, University of Latvia, Latvia (virtual conference)
- TQC 2020, University of Latvia, Latvia (virtual conference)
- TQC 2019, University of Maryland, USA
- TQC 2018, University of Technology Sydney, Australia
- TQC 2017, Université Pierre et Marie Curie, France
- TQC 2016, Freie Universität Berlin, Germany
- TQC 2015, Université libre de Bruxelles, Brussels, Belgium
- TQC 2014, National University of Singapore, Singapore
- TQC 2013, University of Guelph, Canada
- TQC 2012, University of Tokyo, Japan
- TQC 2011, Universidad Complutense de Madrid, Spain
- TQC 2010, University of Leeds, UK
- TQC 2009, Institute for Quantum Computing, University of Waterloo, Canada
- TQC 2008, University of Tokyo, Japan
- TQC 2007, Nara Institute of Science and Technology, Nara, Japan
- TQC 2006, NTT R&D Center, Atsugi, Kanagawa, Japan

The conference consisted of invited talks, contributed talks and a poster session. The invited talks were given by Greg Meyer, Omri Shmueli, Sevag Gharibian and Uma Girish.

Submissions were solicited for three tracks: With Proceedings (talk and proceedings), Without Proceedings (talk only) and Poster only submissions (no talk). There were 443 submissions for the three tracks together. The program committee selected 87 submissions for talks, including 8 to be published in the With Proceedings track.

We wish to thank the members of the Program Committee and all subreviewers for their incredible and hard work, without which we could not form an excellent program. We also thank the Local Organizing Committee for all their efforts in organizing the conference and

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accommodating the the requests of the Program Committee and the Steering Committee for their guidance, as well as for maintaining the conference's high standards. Last but not least, we thank the authors of all the submissions made to TQC 2026.

Rotem Arnon and Aram W. Harrow

Conference Organization

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- Stefanos Kourtis
- Dave Touchette
- Cunlu Zhou

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- Kai-Min Chung
- Shelby Kimmel
- François Le Gall
- Kae Nemoto
- Lídia del Rio

Best Paper Prizes

The Program Committee selected as the TQC 2026 Best Paper Prize:

- *The code distance of Floquet codes* by Keller Blackwell and Jeongwan Haah.

The Program Committee selected as the TQC 2026 Best Student Paper Prize:

- *Optimal Qubit Purification and Unitary Schur Sampling via Random SWAP Tests* by Shrigyan Brahmachari, Austin Hulse, Henry Pfister and Iman Marvian.

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