Saturday, September 8

8:45~9:00	opening remarks
9:00~10:00	**Invited Talk:** Yasunobu Nakamura (Tokyo): Superconducting quantum circuits: quantum computing and other applications
10:00~10:30	*coffee*
10:30~12:00	**Plenary Contributed Talks:** 1. *High-dimensional quantum communication with twisted photons propagating in a fiber link.* Daniele Cozzolino, Davide Bacco, Beatrice Da Lio, Kasper Ingerslev, Yunhong Ding, Kjeld Dalgaard, Poul Kristensen, Michael Galili, Karsten Rottwitt, Siddharth Ramachandran and Leif Katsuo Oxenløwe 2. *Linear programs for entanglement and key distribution in the quantum internet.* Stefan Baeuml, Koji Azuma, Go Kato and David Elkouss 3. *Measurements in two bases are sufficient for certifying high-dimensional entanglement.* Jessica Bavaresco, Natalia Herrera Valencia, Claude Klöckl, Matej Pivoluska, Paul Erker, Nicolai Friis, Mehul Malik and Marcus Huber
12:00~13:30	*lunch*
13:30~14:50	**Parallel Session A:** 1. *Fault-tolerant quantum metrology.* Animesh Datta and Theodoros Kapourniotis 2. *Uncertainty relations in implementation of unitary operation.* Hiroyasu Tajima, Naoto Shiraishi and Keiji Saito 3. *Test one to test many: a unified approach to quantum benchmarks.* Ge Bai and Giulio Chiribella 4. *Self-testing mutually unbiased bases in the prepare-and-measure scenario.* Máté Farkas **Parallel Session B:** 1. *Near-term repeater experiments with NV centers: overcoming the limitations of direct transmission.* Kenneth Goodenough, Filip Rozpedek, Raja Yehia, Maximilian Ruf, Peter Humphreys, Ronald Hanson, Stephanie Wehner and David Elkouss 2. *Experimental investigation of contextuality correlations from platonic graphs.* Jin-Shi Xu 3. *Entanglement structure: entanglement partitioning in multipartite systems and its experimental detection using optimizable witnesses.* He Lu, Qi Zhao, Zheng-Da Li, Xu-Fei Yin, Xiao Yuan, Jui-Chen Hung, Luo-Kan Chen, Li Li, Nai-Le Liu, Cheng-Zhi Peng, Yeong-Cherng Liang, Xiongfeng Ma, Yu-Ao Chen and Jian-Wei Pan 4. *High-Threshold Fault-Tolerant Quantum Computation with Analog Quantum Error Correction.* Kosuke Fukui, Akihisa Tomita, Atshushi Okamoto and Keisuke Fujii
14:50~15:30	*coffee*
15:30~16:30	**Invited Talk:** Nicolas Gisin (Geneva): From quantum foundations to applications and back
16:30~18:00	**Tutorial:** Sandu Popescu (Bristol): Multi-time states and multi-time measurements

Sunday, September 9

9:00~10:00	**Invited Talk:** Keisuke Fujii (Kyoto): Quantum speedup in stoquastic adiabatic quantum computation with non-standard measurements
10:00~10:30	*coffee*
10:30~12:00	**Plenary Contributed Talks:** 1. *On efficiently solvable cases of Quantum k-SAT.* Marco Aldi, Niel De Beaudrap, Sevag Gharibian and Seyran Saeedi 2. *Encoding Electronic Spectra in Quantum Circuits with Linear T Complexity.* Ryan Babbush, Craig Gidney, Dominic Berry, Nathan Wiebe, Jarrod McClean, Alexandru Paler, Austin Fowler and Hartmut Nevan 3. *Thermality of Quantum Approximate Markov Chains and Locality of Entanglement Spectrum.* Kohtaro Kato and Fernando Brandao
12:00~13:30	*lunch* *(SC meeting)*
13:30~14:50	**Parallel Session A:** 1. *Entanglement preserving local thermalization.* Chung-Yun Hsieh, Matteo Lostaglio and Antonio Acín 2. *Beyond the thermodynamic limit: finite-size corrections to state interconversion rates.* Christopher Chubb, Marco Tomamichel and Kamil Korzekwa 3. *Quantifying memory capacity as a quantum thermodynamic resource.* Varun Narasimhachar, Jayne Thompson, Jiajun Ma, Gilad Gour and Mile Gu 4. *On the dynamics of initially correlated open quantum systems: theory and applications.* Gerardo Paz Silva, Michael J. W. Hall and Howard Wiseman **Parallel Session B:** 1. *Verification of many-qubit states.* Yuki Takeuchi and Tomoyuki Morimae 2. *empty slot* 3. *Variational quantum simulation of imaginary time evolution with applications in chemistry and beyond.* Sam McArdle, Suguru Endo, Ying Li, Simon Benjamin and Xiao Yuan 4. *empty slot*
14:50~15:30	*coffee*
15:30~17:00	**Tutorial:** Ignacio Cirac (MPQ, Garching): Solving quantum problems with quantum computers
17:00~18:30	Poster Session A

Monday, September 10

9:00~10:00	**Invited Talk:** Robert Raussendorf (British Columbia): A computationally universal phase of quantum matter
10:00~10:30	*coffee*
10:30~11:50	**Parallel Session A:** 1. *Architectures for quantum simulation showing a quantum speedup.* Juan Bermejo-Vega, Dominik Hangleiter, Martin Schwarz, Robert Raussendorf and Jens Eisert 2. *Interactive Proofs with Polynomial-Time Quantum Prover for Computing the Order of Solvable Groups.* Francois Le Gall, Tomoyuki Morimae, Harumichi Nishimura and Yuki Takeuchi 3. *Quantum algorithm for matrix functions by Cauchy's integral formula.* Souichi Takahira, Asuka Ohashi, Tomohiro Sogabe and Tsuyoshi Usuda 4. *Oracle complexity classes and local measurements on physical Hamiltonians.* Sevag Gharibian, Stephen Piddock and Justin Yirka **Parallel Session B:** 1. *Quasi-factorization of the relative entropy.* Ángela Capel, Angelo Lucia and David Perez-Garcia 2. *Approximate recovery with locality and symmetry constraints.* Cedric Beny, Zoltan Zimboras and Fernando Pastawski 3. *Reversing unknown quantum transformations: A universal protocol for inverting general unitary operations.* Marco Túlio Quintino, Qingxiuxiong Dong, Akihito Soeda and Mio Murao 4. *Connections Between Mutually Unbiased Bases and Quantum Random Access Codes.* Edgar A Aguilar, Jakub Borkala, Piotr Mironowicz and Marcin Pawlowski
11:50~12:00	*group photo*
12:00~18:00	excursion
18:30~20:30	banquet

Tuesday, September 11

Time	
9:00~10:00	**Invited Talk:** Thomas Vidick (Caltech): A Cryptographic Test of Quantumness and Certifiable Randomness from a Single Quantum Device
10:00~10:30	*coffee*
10:30~12:00	**Plenary Contributed Talks:** 1. *Quantum generalizations of the polynomial hierarchy with applications to QMA(2).* Sevag Gharibian, Jamie Sikora, Miklos Santha, Aarthi Sundaram and Justin Yirka 2. *Catalytic Quantum Randomness.* Paul Boes, Henrik Wilming, Rodrigo Gallego and Jens Eisert 3. *Quantum Probability Estimation for Randomness with Quantum Side Information.* Yanbao Zhang, Emanuel Knill and Honghao Fu
12:00~13:30	*lunch*
13:30~14:30	**Parallel Session A:** 1. *Distillation of quantum coherence in non-asymptotic setting.* Bartosz Regula, Kun Fang, Xin Wang, Ludovico Lami and Gerardo Adesso 2. *Polynomial measure of coherence.* You Zhou, Qi Zhao, Xiao Yuan and Xiongfeng Ma 3. *Convex resource theory of non-Gaussianity.* Ryuji Takagi and Quntao Zhuang **Parallel Session B:** 1. *Implementation of Practical Unforgeable Quantum Money.* Mathieu Bozzio, Adeline Orieux, Luis Trigo Vidarte, Isabelle Zaquine, Iordanis Kerenidis and Eleni Diamanti 2. *Constructions for Communication Efficient Quantum Secret Sharing.* Kaushik Senthoor and Pradeep Sarvepalli 3. *Quantum network routing and local complementation.* Anna Pappa, Frederik Hahn and Jens Eisert
14:30~15:00	*coffee*
15:00~17:00	**Invited Talks:** 1. Pascale Senellart (C2N-CNRS): Generation and manipulation of quantum light with semiconductor quantum dots 2. Wolfgang Tittel (Calgary): Entanglement and non-locality between desperate solid-state quantum memories mediated by photons
17:00~18:30	Poster Session B

Wednesday, September 12

9:00~10:00	**Invited Talk:** Barbara Kraus (Innsbruck): Local transformation of multipartite entanglement
10:00~10:30	*coffee*
10:30~12:00	**Plenary Contributed Talks:** 1. *Attaining the ultimate precision limit in quantum state estimation.* Yuxiang Yang, Giulio Chiribella and Masahito Hayashi 2. *Emergence of classicality and generalized decoherence in causal physical theories through a generalized decoherence.* Roberto Salazar, Carlo Scandolo, Jaroslaw Korbicz and Pawel Horodecki 3. *Optimal Hiding of Quantum Information.* Francesco Buscemi
12:00~13:30	*lunch*
13:30~14:50	**Parallel Session A:** 1. *Quantum Computing for Molecular Vibronic Spectra and Gaussian Boson Sampling.* Joonsuk Huh and Seungbeom Chin 2. *Power of Uninitialized Qubits in Shallow Quantum Circuits.* Yasuhiro Takahashi and Seiichiro Tani 3. *Quantum Circuit Learning: Framework for Machine Learning with Quantum Enhanced Feature Space.* Kosuke Mitarai, Makoto Negoro, Masahiro Kitagawa and Keisuke Fujii 4. *Rational proofs for quantum computing.* Tomoyuki Morimae and Harumichi Nishimura **Parallel Session B:** 1. *Causal Asymmetry in a Quantum World.* Jayne Thompson, Andrew Garner, John Mahoney, James Crutchfield, Vlatko Vedral and Mile Gu 2. *The fundamental connection between quantum contextuality and quantum communication.* Debashis Saha, Anubhav Chaturvedi, Pawel Horodecki and Marcin Pawlowski 3. *Semi-device-independent characterisation of multipartite entangled states and measurements.* Armin Tavakoli, Alastair Abbott, Marc-Olivier Renou, Nicolas Gisin and Nicolas Brunner 4. *Universally Fisher-symmetric informationally complete measurements.* Huangjun Zhu and Masahito Hayashi
14:50~15:30	*coffee*
15:30~16:30	**Invited Talk:** Howard Wiseman (Griffith): Experimental tests of quantum non-locality beyond EPR-steering and beyond Bell
16:30~17:00	closing remarks