

AQIS'10 PROGRAM

August 28, 2010 (Sat)

9:00 - 9:20 [Opening]

9:20 - 10:50

9:20 - 10:15 [Keynote Talk] *Some Perspectives on Quantum Complexity*
Andrew Chi-Chih Yao (Tsinghua University/the Chinese University of Hong Kong)

10:15 - 10:50 [Long Talk] *An efficient test for product states, with applications to quantum Merlin-Arthur games*
Aram W. Harrow (University of Bristol) and Ashley Montanaro (University of Bristol)

11:20 - 12:30

11:20 - 11:55 [Long Talk] *Trading Resources in Quantum Communication*
Mark M. Wilde (McGill University) and Min-Hsiu Hsieh (ERATO-SORST)

11:55 - 12:30 [Long Talk] *Clifford Group by Code Deformation on Topological Subsystem Codes*
Hector Bombin (Perimeter Institute, Ontario)

13:50 - 15:10

13:50 - 14:35 [Invited Talk] *Focusing on decoherence: Moving beyond models*
Bill Coish (Institute for Quantum Computing, University of Waterloo)

14:35 - 15:10 [Long Talk] *Integrated quantum photonics*
Damien Bonneau (Univ. of Bristol), Pruet Kalasuwan (Univ. of Bristol), Anthony Laing (Univ. of Bristol), Jonathan C.F. Matthews (Univ. of Bristol), Alberto Peruzzo (Univ. of Bristol), Kostas Poulios (Univ. of Bristol), Peter Shadbolt (Univ. of Bristol), JP Hadden (Univ. of Bristol), Joanne Harrison (Univ. of Bristol), Antony Stanley-Clarke (Univ. of Bristol), Luca Marseglia (Univ. of Bristol), Ying-Lung Daniel Ho (Univ. of Bristol), Brian Patton (Univ. of Bristol), John G. Rarity (Univ. of Bristol), Pisu Jiang (Univ. of Bristol), Matthaeus Halder (Univ. of Bristol), Mirko Lobino (Univ. of Bristol), Alberto Politi (Univ. of Bristol), Maria Rodas Verde (Univ. of Bristol), Xiao-Qi Zhou (Univ. of Bristol), Mark Thompson (Univ. of Bristol), and Jeremy L. O'Brien (Univ. of Bristol)

15:40 - 17:20 [Parallel Session A] Information I

15:40 - 16:05 *Analysis of two-way LOCC in entanglement assisted implementation of controlled-unitary operations*
Akihito Soeda (University of Tokyo), Peter Turner (University of Tokyo), and Mio Murao (University of Tokyo)

16:05 - 16:30 *Steering quantum operations with a single qubit*
Janet Anders (University College London), Daniel K. Oi (University of Strathclyde), Elham Kashefi (University of Edinburgh), Dan E. Browne (University College London), and Erika Andersson (Heriot-Watt University)

16:30 - 16:55 *When is there a multipartite maximum entangled state?*
Runyao Duan (University of Technology, Sydney) and Yaoyun Shi (University of Michigan)

16:55 - 17:20 *Symmetric state entanglement and the Majorana representation*
Martin Aulbach (University of Oxford), Damian Markham (Telecom ParisTech), and Mio Murao (University of Tokyo)

15:40 - 17:20 [Parallel Session B] Model/Implementation

15:40 - 16:05 *Many-body interactions with single-electron quantum dots for topological quantum computation*
Peng Xue (Southeast University)

16:05 - 16:30 *Quantum computation on the edge of a symmetry-protected topological order*
Akimasa Miyake (Perimeter Institute, Ontario)

16:30 - 16:55 *Neutral Atom Quantum Computer with On-Demand Interaction*

Mikio Nakahara (Kinki University), Tetsuo Ohmi (Kinki University), Yasushi Kondo (Kinki University), Elham Hosseini Lapasar (Kinki University), and Kenichi Kasamatsu (Kinki University)

16:55 - 17:20 *Driving two fixed qubits to a maximally entangled state by repeated on- and off-resonant scattering of ancilla qubits*

Kazuya Yuasa (Waseda Institute for Advanced Study, Tokyo), Daniel Burgarth (Imperial College, London), Vittorio Giovannetti (Scuola Normale Superiore, Pisa), and Hiromichi Nakazato (Waseda University, Tokyo)

17:30 - 19:00 [Poster Session A]

August 29, 2010 (Sun)

9:20 - 10:50

9:20 - 10:05 [Invited Talk] *Strong coupling of an artificial atom to a continuum of one-dimensional electromagnetic modes*
Yasunobu Nakamura (NEC/RIKEN)

10:05 - 10:50 [Invited Talk] *A brief visit to the zoo of multipartite entangled states*
Dagmar Bruß (Institut für Theoretische Physik III/Heinrich-Heine-Universität Düsseldorf)

11:20 - 12:35 [Parallel Session A] Error Correction

11:20 - 11:45 *Quantum Generalized Reed-Solomon codes concatenated with random rate one inner stabilizer codes asymptotically attain the Quantum Gilbert-Varshamov bound*
Yingkai Ouyang (Institute for Quantum Computing, University of Waterloo)

11:45 - 12:10 *On a Generalization of Clifford Codes*
Andreas Klappenecker (Texas A&M University)

12:10 - 12:35 *Error correction and distinguishability preserving codes*
Cédric Bény (CQT, Singapore), Milan Mosonyi (CQT, Singapore/Budapest University of Technology and Economics)

11:20 - 12:35 [Parallel Session B] Computation

11:20 - 11:45 *Improved loss tolerant quantum coin flipping*
André Chailloux (LRI - Université Paris Sud)

11:45 - 12:10 *Estimating Turaev-Viro 3-manifold invariants is universal for quantum computation*
Gorjan Alagic (Institute for Quantum Computing, University of Waterloo), Stephen P. Jordan (Institute for Quantum Information, Caltech), Robert König (Institute for Quantum Information, Caltech), and Ben Reichardt (Institute for Quantum Computing, University of Waterloo)

12:10 - 12:35 *Classical simulation of commuting quantum computations implies collapse of the polynomial hierarchy*
Michael J. Bremner (Leibniz University Hannover), Richard Jozsa (University of Cambridge), and Dan Shepherd (CESG)

14:00 - 15:40 [Parallel Session A] Communication

14:00 - 14:25 *Topological Squeezing of Light*
Simon Devitt (NII), Damian Markham (CNRS, LTCI, Telecom, Paris), Peter van Loock (Universität Erlangen-Nürnberg), William J. Munro (NTT Basic Research Laboratories), and Kae Nemoto (NII)

14:25 - 14:50 *Long-distance practical quantum key distribution by entanglement swapping*
Artur Scherer (University of Calgary), Barry C. Sanders (University of Calgary), and Wolfgang Tittel (University of Calgary)

14:50 - 15:15 *Quantum repeaters and computation by a single module: Remote nondestructive parity measurement*
Koji Azuma (NTT Basic Research Laboratories), Hitoshi Takeda (Osaka University), Masato Koashi (Osaka University), and Nobuyuki Imoto (Osaka University)

15:15 - 15:40 *Security Proof of the Phase-Encoded BB84 Protocol*
Agnes Ferenczi (University of Waterloo), Varun Narasimhachar (University of Waterloo), Normand Beaudry (ETH Zurich), and Norbert Lütkenhaus (University of Waterloo/University Erlangen-Nuremberg)

14:00 - 15:40 [Parallel Session B] Information II

14:00 - 14:25 *Super-duper-activation of the Zero-Error Quantum Capacity*
Jianxin Chen (State Key Laboratory of Intelligent Technology and Systems, Beijing), Toby S. Cubitt (University of Bristol), Graeme Smith (IBM T.J. Watson Research Center), and Aram W. Harrow (University of Bristol)

14:25 - 14:50 *On metric of quantum channel spaces*
Keiji Matsumoto (NII/ERATO-SORST)

14:50 - 15:15 *On the relation between quantum parameter estimation and weak values*
Holger F. Hofmann (Hiroshima University/CREST)

15:15 - 15:40 *Landauer's principle in the quantum domain*

Janet Anders (University College London), Stefanie Hilt (University of Augsburg), Eric Lutz (University of Augsburg), and Saroosh Shabbir (University College London)

16:00 - 17:30 [Poster Session B]

18:30 - 20:30 [Banquet]

August 30, 2010 (Mon)

9:20 - 10:50

9:20 - 10:15 [Keynote Talk] *Quantum Information and Quantum Metrology with Trapped Ions*
David J. Wineland (NIST)

10:15 - 10:50 [Long Talk] *An Invisible Quantum Tripwire*
Petr M Anisimov (Louisiana State University), S Blane McCracken (Louisiana State University), Daniel J Lum (Louisiana State University), Hwang Lee (Louisiana State University), and Jonathan P. Dowling (Louisiana State University)

11:20 - 12:30

11:20 - 11:55 [Long Talk] *Experimentally measurable criterion for detection of genuine multipartite entanglement in high-dimensional systems*
Marcus Huber (University of Vienna), Beatrix Hiesmayr (University of Vienna)

11:55 - 12:30 [Long Talk] *Requirements on strong χ^2 nonlinearity for parametric conversion and using optical nonlinearity for bell measurement*
Patrick Leung (University of Calgary), Timothy Ralph (University of Queensland), William Munro (Hewlett-Packard Laboratories), and Kae Nemoto (NII)

13:50 - 15:10

13:50 - 14:35 [Invited Talk] *Quantum Non-locality, Communication Complexity, and Grothendieck Inequalities*
Harry Buhrman (Centrum Wiskunde & Informatica/University of Amsterdam)

14:35 - 15:10 [Long Talk] *Spin-chain-based full quantum computation by accessing only two spins*
Daniel Burgarth (Imperial College/RIKEN), Koji Maruyama (RIKEN), Michael Murphy (Universität Ulm), Simone Montangero (Universität Ulm), Tommaso Calarco (Universität Ulm / ECT), Franco Nori (RIKEN/University of Michigan), and Martin B. Plenio (Imperial College/Universität Ulm)

15:40 - 17:20 [Parallel Session A] Information III

15:40 - 16:05 *Comparing the performance of quantum tomographic apparatuses by large deviation analysis*
Takanori Sugiyama (University of Tokyo), Peter S. Turner (University of Tokyo), and Mio Muraio (University of Tokyo)

16:05 - 16:30 *Characterizing the nonlocal correlations created in entanglement swapping experiments*
Cyril Branciard (University of Queensland), Nicolas Gisin (Université de Genève), and Stefano Pironio (Université Libre de Bruxelles)

16:30 - 16:55 *Guess your neighbor's input: a multipartite non-local game with no quantum advantage*
Mafalda L. Almeida (ICFO), Jean-Daniel Bancal (Université de Genève), Nicolas Brunner (University of Bristol), Antonio Acin (ICFO), Nicolas Gisin (Université de Genève), and Stefano Pironio (Université Libre de Bruxelles)

16:55 - 17:20 *Loophole-free Bell test for continuous variables via wave and particle correlations*
Se-Wan Ji (Korea Institute for Advanced Study), Hyun-chul Nha (Texas A&M University at Qatar), Jaewan Kim (Korea Institute for Advanced Study), Hai-Woong Lee (Korea Advanced Institute of Science and Technology), M.S. Zubairy (Texas A&M University)

15:40 - 17:20 [Parallel Session B] Cryptography/Atom optics

15:40 - 16:05 *Symmetries in Quantum Key Distribution and the Connection between Optimal Attacks and Optimal Cloning*
Agnes Ferenczi (University of Waterloo) and Norbert Lütkenhaus (University of Waterloo/University Erlangen-Nuremberg)

16:05 - 16:30 *Quantum Simultaneous Contract Signing*
Jan Bouda (Masaryk University), Matej Pivoluska (Masaryk University), Libor Caha (Masaryk University), Paulo Mateus (SQIG IST, Lisboa), and Nikola Paunkovic (SQIG IST, Lisboa)

16:30 - 16:55 *Practical coherent feedback for field squeezing*
Sanae Iida (Keio University), Mitsuyoshi Yukawa (University of Tokyo), Hidehiro Yonezawa (University of Tokyo), Naoki Yamamoto (Keio University), and Akira Furusawa (University of Tokyo)

16:55 - 17:20 *Accelerating optimization problems using Bose-Einstein condensation and measurement-feedback circuits*

Tim Byrnes (NII/University of Tokyo), Kai Yan (NII), Kai Wen (Stanford University), and Yoshihisa Yamamoto (NII/Stanford University)

17:30 - 19:00 [Poster Session C]

August 31, 2010 (Tue)

9:20 - 10:50

9:20 - 10:05 [Invited Talk] *Quantum Optical Computing, Imaging, and Metrology*
Jonathan P. Dowling (Louisiana State University)

10:05 - 10:50 [Invited Talk] *Simulating quantum computers with probabilistic methods*
Maarten Van den Nest (Max-Planck-Institut für Quantenoptik)

11:20 - 12:30

11:20 - 11:55 [Long Talk] *Quantum benchmark for storage of squeezed states: Theory and Experiment*
Kasper Jensen (QUANTOP, Niels Bohr Institute, University of Copenhagen), Wojciech Wasilewski (QUANTOP, Niels Bohr Institute, University of Copenhagen), Hanna Krauter (QUANTOP, Niels Bohr Institute, University of Copenhagen), Thomas Fernholz (QUANTOP, Niels Bohr Institute, University of Copenhagen), Bo Melholt Nielsen (QUANTOP, Niels Bohr Institute, University of Copenhagen), Alessio Serafini (University College London), Masaki Owari (Institut für Theoretische Physik, Universität Ulm), Martin B. Plenio (Institut für Theoretische Physik, Universität Ulm) Michael M. Wolf (QUANTOP, Niels Bohr Institute, University of Copenhagen), Eugene Polzik (QUANTOP, Niels Bohr Institute, University of Copenhagen)

11:55 - 12:30 [Long Talk] *The Perfect Distinguishability of Quantum Operations*
Runyao Duan (University of Technology, Sydney), Yuan Feng (University of Technology, Sydney), and Mingsheng Ying (University of Technology, Sydney)

13:50 - 15:10

13:50 - 14:35 [Long Talk] *Work value of information in a single instance of work extraction*
Oscar Dahlsten (NUS/Oxford), Renato Renner (ETH Zurich), Elisabeth Rieper (NUS), and Vlatko Vedral (Oxford/NUS)

14:35 - 15:10 [Long Talk] *Anyonic entanglement renormalization*
Robert Koenig (Institute for Quantum Information, Caltech) and Ersen Bilgin (Institute for Quantum Information, Caltech)

15:10 - 15:30 [Closing]

Posters

August 28, 2010 (Sat) [Poster Session A]

Restricted Geometric Transformations and their applications for Quantum Image Watermarking and Authentication

Abdullahi M. Iiyasu (Tokyo Institute of Technology), Phuc Q. Le (Tokyo Institute of Technology), Fangyan Dong (Tokyo Institute of Technology), and Kaoru Hirota (Tokyo Institute of Technology)

Phase Compensation Enhancement of Photon Pair Entanglement Generated from Biexciton Decays in Quantum Dots

Zong-Quan Zhou (USTC/Hefei University of Technology), Chuan-Feng Li (USTC), and Guang-Can Guo (USTC)

Additivity and non-additivity of multipartite entanglement measures

Huangjun Zhu (National University of Singapore), Lin Chen (National University of Singapore), and Masahito Hayashi (Tohoku University)

Polarization-based entanglement swapping experiment at 1550 nm for fiber-optic quantum network system

Akio Yoshizawa (AIST), Yinghong Xue (AIST), and Hidemi Tsuchida (AIST)

Evolution of Entanglement in Heisenberg Spin Chain

Chunlei Zhang (Suzhou University) and Shiqun Zhu (Suzhou University)

Local Quench Induced Long-Range Entanglement in XXZ Heisenberg Spin Chain

Jie Ren (Changshu Institute of Technology) and Shiqun Zhu (Suzhou University)

Security of "Counterfactual Quantum Cryptography"

Zhen-Qiang Yin (USTC), Hong-Wei Li (USTC), Zheng-Fu Han (USTC), and Guang-Can Guo (USTC)

Monogamy of multi-qubit entanglement in terms of Rényi and Tsallis entropies

Jeong San Kim (University of Calgary) and Barry C. Sanders (University of Calgary)

Entanglement distribution and dynamics by convex-roof extended negativity

Soojoon Lee (Kyung Hee University), Jeong San Kim (University of Calgary), and Barry C. Sanders (University of Calgary)

Robustness of perfect entanglers

Daiki Takaguchi (The Graduate University for Advanced Studies), Simon J. Devitt (NII), and Kae Nemoto (The Graduate University for Advanced Studies, NII)

Quantum entanglement, unitary braid representation and Temperley-Lieb algebra

Choon-Lin Ho (Tamkang University/National University of Singapore), A.I. Solomon (Open University/University of Pairs VI), and C.H. Oh (National University of Singapore)

Quantum-computational speedup of heuristic algorithm for traveling salesman problem

Jeongho Bang (Hanyang University), Seokwon Yoo (Hanyang University), James Lim (Hanyang University), Junghee Ryu (Hanyang University), Changhyoup Lee (Hanyang University), and Jinyoung Lee (Hanyang University/Korea Institute for Advanced Study)

Minimal Model of Quantum Energy Teleportation

Masahiro Hotta (Tohoku University)

Irregular Quantum Quasi LDPC Codes

Shengmei Zhao (NUPT), Shaohua Lin (NUPT), Yan Zhu (NUPT), and Fei Li (NUPT)

A $SU(N)$ Wigner characteristic function for N -dimensional systems

Todd Tilma (NII) and Kae Nemoto (NII)

Quantum communication over a collective noise channel

Xihan Li (Chongqing University) and Fuguo Deng (Beijing Normal University)

Unambiguous Discrimination of Squeezed States

Devendra Kumar Mishra (V. S. Mehta College of Science, Bharwari) and V. Bůžek (Research Center for Quantum Information, Slovak Academy of Sciences)

Nonlocality Distillation for Multipartite Postquantum Boxes

Keng-Shuo Wu (Chung Yuan Christian University) and Li-Yi Hsu (Chung Yuan Christian University)

Unambiguous Comparison of sets of mixed quantum states

Shengshi Pang (USTC) and Shengjun Wu (USTC)

Nonclassicality and Nonclassical Correlations

Kisik Kim (Inha University), Jaewan Kim (Korea Institute for Advanced Study), and Joonwoo Bae (Korea Institute for Advanced Study)

Quantum nonlocality can be activated

Daniel Cavalcanti (CQT, University of Singapore), Mafalda Almeida (ICFO, Barcelona), Antonio Acin (ICFO, Barcelona/ICREA, Barcelona), and Valerio Scarani (CQT/Dept. of Physics, University of Singapore)

Multipartite Classical States and Detecting Quantum Discord

Lin Chen (National University of Singapore), Eric Chitambar (CQIQC), Kavan Modi (National University of Singapore), and Giovanni Vacanti (National University of Singapore)

Measurement Space and Detectable Entanglement

Sebastian Meznaric (University of Oxford)

Programmable quantum processors with continuous history variable

Alexander Yu. Vlasov (Federal Radiology Center, IRH/A. Friedmann Lab)

Device-independent quantum coin flipping

N. Aharon (Tel-Aviv University), A. Chailloux (LRI, Université Paris-Sud), I. Kerenidis (LRI, Université Paris-Sud), S. Massar (Laboratoire d'Information Quantique, Université Libre de Bruxelles), S. Pironio (Laboratoire d'Information Quantique, Université Libre de Bruxelles), and J. Silman (Laboratoire d'Information Quantique, Université Libre de Bruxelles)

Towards automation of unconditional security proof of QKD

Takahiro Kubota (University of Tokyo), Yoshihiko Kakutani (University of Tokyo), Go Kato (NTT), and Yasuhito Kawano (NTT)

Systematic Generalization of the Bell Inequality and Proposal of Test of a New Type

Shogo Tanimura (Kyoto University) and Tomohiro Isobe (Kyoto University)

Functionality-Preserving Randomization for Unitary Operations and Its Computational Complexity

Yu Tanaka (Sony) and Mio Murao (University of Tokyo)

A Weak Quantum Oblivious Transfer

Kai-Yuen Cheong (Japan Advanced Institute of Science and Technology), Min-Hsiu Hsieh (ERATO-SORST), and Takeshi Koshihara (Saitama University)

A Quantum Adder on a Two-Dimensional Qubit Array Architecture

Byung-Soo Choi (Ewha Womans University) and Rodney Van Meter (Keio University)

August 29, 2010 (Sun) [Poster Session B]

Deterministic photon-photon (SWAP)^{1/2} gate using a lambda system

Kazuki Koshino (Tokyo M&D University), Satoshi Ishizaka (Hiroshima University), and Yasunobu Nakamura (NEC)

Gisin's theorem for two-qubit inseparable states

I Ching Yu (National Taiwan Normal University), Feng-Li Lin (National Taiwan Normal University), and Li-Yi Hsu (Chung Yuan Christian University)

Radiation from accelerated impurities in Bose-Einstein condensate

Jun Suzuki (NII)

Quantum circuit for security proof of quantum key distribution without encryption of error syndrome and noisy processing

Kiyoshi Tamaki (NTT Basic Research Laboratories/CREST), and Go Kato (NTT Communication Science Laboratories)

Asymptotics of Quantum Walks on the Line with Phase Parameters

Marcos Villagra (Nara Institute of Science and Technology), Masaki Nakanishi (Yamagata University), Shigeru Yamashita (Ritsumeikan University), and Yasuhiko Nakashima (Nara Institute of Science and Technology)

A SAT Solver Based on Quantum and Classical Random Walk

Daisuke Yokomine (Nara Institute of Science and Technology), Masaki Nakanishi (Yamagata University), Shigeru Yamashita (Ritsumeikan University), and Yasuhiko Nakashima (Nara Institute of Science and Technology)

A New Construction Method of Quantum Error-Correcting Codes Based on Elementary Transformation

Hanwu Chen (Southeast University), Fangying Xiao (Southeast University), and Meiju Xing (Southeast University)

Dual phase modulation in continuous variable quantum key distribution

Wenchao Dai (Shanghai Jiaotong University), Yuan Lu (Shanghai Jiaotong University), Jun Zhu (Shanghai Jiaotong University), and Guihua Zeng (Shanghai Jiaotong University)

Cluster state generation using the qubus

Katherine L Brown (University of Leeds), Clare Horsman (University of Oxford), William J Munro (NTT Basic Research Laboratories), and Vivien M. Kendon (University of Leeds)

Pure dephasing dynamics of two charge qubits

W. Ben Chouikha (Laboratoire de Physique de la Matière Condensée, Faculté des Sciences de Tunis), S. Jaziri (Faculté des Sciences de Bizerte), and R. Bennaceur (Laboratoire de Physique de la Matière Condensée, Faculté des Sciences de Tunis)

Minimal and Optimal Multiphoton Polarization State Tomography

Ng Tien Tjuen (National University of Singapore), Poh Hou Shun (National University of Singapore), Antía Lamas-Linares (National University of Singapore), Alexander Ling (National University of Singapore), and Christian Kurtsiefer (National University of Singapore)

Quantum simulation and quantum analogue computation

Viv Kendon (University of Leeds)

Analysis of the Quantum Decoherence due to Dissipation

Ken-Ichi Aoki (Kanazawa University), Yasuhiro Fujii (Kanazawa University), and Tamao Kobayashi (Kanazawa University)

Multiplexing in Quantum Repeater Networks

Luciano Aparicio (University of Tokyo) and Rodney Van Meter (Keio University)

Accuracy limits of multi-qubit gates under conservation laws

Tokishiro Karasawa (NII), Kae Nemoto (NII), and Masanao Ozawa (Nagoya University)

Interaction of light with a single atom in the strong focusing regime

Syed Abdullah Aljunid (National University of Singapore), Jianwei Lee (National University of Singapore), Brenda Chng (National University of Singapore), Martin Paesold (ETH Zurich), Kadir Durak (National University of Singapore), Dao Hoang Lan (National University of Singapore), Zhi Wei Teo (National University of Singapore), Gleb Maslennikov (National University of Singapore), and Christian Kurtsiefer (National University of Singapore)

Application of an efficient purification protocol to solid-state qubits

Tetsufumi Tanamoto (Toshiba), Koji Maruyama (RIKEN), Yuxi Liu (Tsing Hua University), Xuedong Hu (University at Buffalo, SUNY), Keiji Ono (RIKEN), and Franco Nor (The University of Michigan)

Unconditionally Secure User-authenticated Quantum Key Distribution

Jeong Woon Choi (Electronics and Telecommunications Research Institute), Ku-Young Chang (Electronics and Telecommunications Research Institute), Nam-Su Jho (Electronics and Telecommunications Research Institute), and Dowon Hong (Electronics and Telecommunications Research Institute)

Dynamics of Quantum Teleportation and Entanglement with an Accelerated Observer

Kazutomu Shiokawa (National Cheng-Kung University)

Quantum LDPC Code by Concatenating Seed Graphs

Yongsoo Hwang (Gwangju Institute of Science and Technology) and Moongu Jeon (Gwangju Institute of Science and Technology)

Quantum Encrypted Computation Using Quantum Private Queries

Nai-Hui Chia (National Taiwan University), Chia-Hung Chien (National Taiwan University), and Sy-Yen Kuo (National Taiwan University)

Path Selection in Heterogeneous Quantum Networks

Takahiko Satoh (University of Tokyo/ERATO-SORST) and Rodney Van Meter (Keio University)

Sub-Geiger Mode Silicon Avalanche Photodiode: Toward High Detection Efficiency

Kenji Tsujino (ERATO-SORST) and Akihisa Tomita (ERATO-SORST/Hokkaido University)

Experimental Demonstration of an Eight-party Quantum Communication Complexity Scenario with an Eight-photon Entangled State

Yun-Feng Huang (USTC), Liang Peng (USTC), Bi-Heng Liu (USTC), Chuan-Feng Li (USTC), Li Li (USTC), Yu-Hu Li (USTC), and Guang-Can Guo (USTC)

Reverse Test and Characterization of Quantum Relative Entropy

Keiji Matsumoto (NII/ERATO-SORST)

Modeling the superdense coding in satellite-satellite and ground-satellite communications

Mate Galambos (Budapest University of Technology and Economics), Laszlo Bacsardi (Budapest University of Technology and Economics), and Sandor Imre (Budapest University of Technology and Economics)

Quantum Search with the discrete time quantum walk

Neil Lovett (University of Leeds), Rob Heath (University of Leeds), and Viv Kendon (University of Leeds)

Sensitivity of Quantum Walks with Perturbation

Chen-Fu Chiang (University of Central Florida)

Towards complete phase and polarization stabilization of optical fibers for quantum communication

Guilherme B. Xavier (PUC-Rio), Tarcísio R. da Silva (PUC-Rio), Guilherme P. Temporão (PUC-Rio), and J. P. von der Weid (PUC-Rio)

A Numerical Study of Hypothesis Testing for Quantum I.I.D. States

Tatsuya Sakashita (University of Electro-Communications) and Hiroshi Nagaoka (University of Electro-Communications)

August 30, 2010 (Mon) [Poster Session C]

Quantum entanglements and manipulation of molecular spin-qubits by pulsed electron magnetic multiple resonance technique

Kazunobu Sato (Osaka City University), Tomohiro Yoshino (Osaka City University), Shigeaki Nakazawa (Osaka City University), Shinsuke Nishida (Osaka City University), Robabeh D. Rahimi (Osaka City University), Tomoaki Ise (Osaka City University), Ayaka Tanaka (Osaka City University), Kazuo Toyota (Osaka City University), Daisuke Shiomi (Osaka City University), Yasushi Morita (Osaka University), Masahiro Kitagawa (Osaka University), Hideyuki Hara (Bruker BioSpin), Patrick Carl (Bruker BioSpin), Peter Hoefer (Bruker BioSpin), and Takeji Takui (Osaka City University)

Lower Bound on Distributed Entanglement in terms of Negativity

Jeong San Kim (University of Calgary) and Soojoon Lee (Kyung Hee University)

Algorithm Optimisation for Topological Measurement-Based Quantum Computing

Clare Horsman (University of Oxford), Simon Devitt (NII), and Rodney Van Meter (Keio University)

Nonclassical correlation in superdense coding for ENDOR-like systems with a static decoherence control

Robabeh Rahimi (Osaka City University) and Akira SaiToh (Kinki University)

Experimental detection of quantum discord in mixed state quantum computation

Gina Passante (University of Waterloo), Osama Moussa (University of Waterloo), and Raymond Laflamme (University of Waterloo)

Some Classifications of Quantum Codes

Kuan-Peng Chen (National Center for High-Performance Computing), Wei-Chi Su (National Center for High-Performance Computing), Ming-Chung Tsai (National Tsing Hua University), and Zheng-Yao Su (National Center for High-Performance Computing / National Tsing Hua University)

Designing the Optimal Quantum Circuits

Ming-Chung Tsai (National Tsing Hua University), Wei-Chi Su (National Center for High-Performance Computing), Kuan-Peng Chen (National Center for High-Performance Computing), and Zheng-Yao Su (National Center for High-Performance Computing/National Tsing Hua University)

Bi-Partite Separability of Werner State: A Necessary Condition

Wei-Chi Su (National Center for High-Performance Computing), Kuan-Peng Chen (National Center for High-Performance Computing), Ming-Chung Tsai (National Tsing Hua University), and Zheng-Yao Su (National Center for High-Performance Computing/National Tsing Hua University)

Optimal simulation of a perfect entangler

Nengkun Yu (Tsinghua University), Runyao Duan (University of Technology, Sydney), and Mingsheng Ying (University of Technology, Sydney)

Photonic qubit logic in multi-mode cavities

Mark S. Everitt (NII) and Barry M. Garraway (University of Sussex)

A Layered Architecture for Quantum Computing using Optically-Controlled Quantum Dots

Cody Jones (Stanford University), Austin G. Fowler (University of Melbourne), Jungsang Kim (Duke University), Thaddeus D. Ladd (Stanford University/NII), Rodney Van Meter (Keio University), and Yoshihisa Yamamoto (Stanford University/NII)

Molecular Electron Spin-Qubits: Implementation of Quantum Operation and Teleportation

Shigeaki Nakazawa (Osaka City University/CREST), Kazunobu Sato (Osaka City University/CREST), Tomoaki Ise (Osaka City University/CREST), Shinsuke Nishida (Osaka City University/CREST), Tomohiro Yoshino (Osaka City University/CREST), Inobuyuki Mori (Osaka City University), Robabeh Rahimi (Osaka City University), Yasushi Morita (Osaka University/CREST), Kazuo Toyota (Osaka City University/CREST), Daisuke Shiomi (Osaka City University/CREST), Kazuhiro Nakasuji (Osaka University), Masahiro Kitagawa (BrukerBioSpin K. K./CREST), Hideyuki Hara (BrukerBioSpin K. K.), Patrick Carl (BrukerBioSpin GmbH), Peter Hofer (BrukerBioSpin GmbH), and Takeji Takui (Osaka City University/CREST)

Simulation of Quantum Channels Using Linear Optics

David Pitkanen (University of Waterloo), Marco Piani (University of Waterloo), Rainer Kaltenbaek (University of Waterloo), and Norbert Lütkenhaus (University of Waterloo)

A Security Proof of Quantum Key Distribution based on Quantum Kolmogorov Complexity

Takayuki Miyadera (AIST)

Quantum User Authentication for Multiparty Quantum Communications

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Entanglement criteria from discrete Fourier-based uncertainty relations

Ryo Namiki (Kyoto University) and Yuuki Tokunaga (NTT)

Quantum LDPC Decoding Algorithm

Yan Zhu (Nanjing University of Posts and Telecommunications), Shengmei Zhao (Nanjing University of Posts and Telecommunications), and Baoyu Zheng (Nanjing University of Posts and Telecommunications)

Bayesian Approach to Qubit Hamiltonian Parameter Estimation

Alexandr Sergeevich (University of Sydney), Anushya Chandran (Princeton University), Joshua Combes (Griffith University), Howard Wiseman (Griffith University), and Stephen Bartlett (University of Sydney)

Adaptive optical phase estimation

Daisuke Nakane (University of Tokyo), Trevor Wheatley (The University of Tokyo/Australian Research Council/The University of New South Wales), Dominic Berry (University of Waterloo), Hidehiro Yonezawa (University of Tokyo), Hajime Arai (University of Tokyo), Damian Pope (Perimeter Institute, Ontario), Timothy Ralph (Australian Research Council/University of Queensland), Howard Wiseman (Australian Research Council/Griffith University), Elanor Huntington (Australian Research Council/The University of New South Wales), and Akira Furusawa (University of Tokyo)

Pulsed ENDOR Technology Applied to an Isotope-Labeling DPNO Radical Qubit Toward Molecular-Spin Bus QC

Tomohiro Yoshino (Osaka City University/CREST), Shinsuke Nishida (Osaka City University/CREST), Shigeaki Nakazawa (Osaka City University/CREST), Kazunobu Sato (Osaka City University/CREST), Robabeh D. Rahimi (Osaka City University), Daisuke Shiomi (Osaka City University/CREST), Kazuo Toyota (Osaka City University/CREST), Yasushi Morita (Osaka University/CREST), Masahiro Kitagawa (Osaka University/CREST), and Takui Takeji (Osaka City University/CREST)

Explicit Shortest Path Functions of Periodic Graphs toward Investigations on Quantum Computation based on Periodic Structures

Norie Fu (University of Tokyo/ERATO-SORST) and Hiroshi Imai (University of Tokyo/ERATO-SORST)

Heterogeneous Interconnects in a Semiconductor Nanophotonic Surface Code Quantum Computer

Rodney Van Meter (Keio University), Thaddeus D. Ladd (Stanford University), Austin G. Fowler (University of Melbourne), and Yoshihisa Yamamoto (Stanford University/NII)

Defective Qubits in Surface Code Quantum Computation on a Fixed Lattice

Shota Nagayama (Keio University) and Rodney Van Meter (Keio University)

Generation of Single Photons for continuous variable quantum information processing

Siyu Song (University of Tokyo/Tsinghua University), Noriaki Iwata (University of Tokyo), Yoshichika Miwa (University of Tokyo), Tomotaka Kuwahara (University of Tokyo), Takafumi Hawaii (University of Tokyo), and Akira Furusawa (University of Tokyo)

Entanglement purification protocol via two bilateral controlled-NOT operations

Dong Pyo Chi (Seoul National University), Taewan Kim (Seoul National University), and Soojoon Lee (Kyung Hee University)

Quantum Genetic Algorithm and Its Application

Fei Li (Nanjing University of Posts and Telecommunications), Wei Wang (Nanjing University of Posts and Telecommunications), Shengmei Zhao (Nanjing University of Posts and Telecommunications), and Baoyu Zheng (Nanjing University of Posts and Telecommunications)

Witnessing Thermal Steady State Entanglement

Jenny Hide (University of Sussex)

Resonator-assisted entangling gate for singlet-triplet spin qubits in nanowire double quantum dots

Peng Xue (Southeast University/University of Calgary) and Yun Feng Xiao (Peking University)

One Kind of Quantum CSS Code for Burst Errors

Jian-hong Shi (Information Science and Technology Institute) and Wan-su Bao (Information Science and Technology Institute)

Progress on Problem about Quantum Hamming Bound for Impure Quantum Codes

Zhuo Li (Xidian University) and Lijuan Xing (Xidian University)

Cryptographic Applications of Pseudo-Telepathy Games

Ivan Fialík (Masaryk University)