

QIT16 Program

Thursday, 17 May 2007

Time	Title	Author(s)	Affiliation(s)
9:30	Opening address		
Session 1 Chair: Masao Kitano (Kyoto University)			
9:40	Global Stabilization of N-dimensional Quantum Spin Systems via Continuous Feedback	Koji Tsumura	Univ. of Tokyo
10:00	Persistent supercurrent atom-chip towards quantum information processing	Tetsuya Mukai[a,c], Christoph Hufnagel[a,c], Fujio Shimizu[a,b,c]	a:NTT Basic Research Labs, b:UEC Laser, c:JST CREST
10:20	Evaluation of Geometric manipulation of two-level atom on the Bloch sphere using a time domain atom interferometer	Hiromitsu Imai, Atsuo Morinaga	Tokyo Univ. of Science
10:40	Fidelity criteria for quantum-domain transmission and storage of coherent states	Ryo Namiki, Masato Koashi, Nobuyuki Imoto	JST CREST, Osaka Univ.
11:00	Break		
Session 2 Chair: Masahito Hayashi (JST ERATO-SORST Quantum Computation and Information Project)			
11:20	(Invited talk) Threshold of error correction for the toric code	Hidetoshi Nishimori	Tokyo Institute of Technology
12:10	Simple Construction of Parity-Check Matrices for Quantum Error-Correction	Manabu Hagiwara	RCIS
12:30	Lunch		
Session 3 Chair: Satoshi Ishizaka (NEC)			
13:30	A toric variety approach to the geometry of multipartite quantum states	Hoshang Heydari	Institute of Quantum Science, Nihon Univ.
13:50	Entanglement of multipartite symmetric states in the Majorana representation: a geometric approach	Damian Markham	Univ. of Tokyo
14:10	Complementarity, distillable key, and distillable entanglement	Masato Koashi	Osaka Univ., JST CREST
14:30	Break		
Session 4 Chair: Akio Hosoya (Tokyo Institute of Technology)			
14:50	Can quantum coin flip resolve quantum dilemma?	Satoshi Ishizaka	NEC, JST PRESTO
15:10	Quantum Game Theory based on the Schmidt Decomposition: Entanglement and Dilemmas	Tsubasa Ichikawa[a], Izumi Tsutsui[b], Taksu Cheon[c]	a:Univ. of Tokyo, b:KEK, c: Kochi Inst. Tech.
15:30	Experimental realization of quantum leader election on linear optics	Yuta Okubo[a,b], Xiang-Bin Wang[b], Akihisa Tomita[b]	a: Univ. of Tsukuba, b:JST ERATO-SORST Quantum Computation and Information Project
15:50	Fault-tolerant One-Way Computation using Encoded Qubits	Keisuke Fujii, Katsuji Yamamoto	Kyoto Univ.
16:10	Break		
Session 5 Chair: Masanao Ozawa (Tohoku University)			
16:30	(Invited talk) Physics of superposition of macroscopically distinct states	Akira Shimizu	Univ. of Tokyo
17:20-17:40	Quantum Brachistochrone for Mixed States	Alberto Carlini[a,b], Akio Hosoya[a], Tatsuhiko Koike[c], Yosuke Okudaira[a]	a:Tokyo Institute of Technology, b:Macquarie Univ., c:Keio Univ.
18:00	Banquet		

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Time	Title	Author(s)	Affiliation(s)
Session 6 Chair: Akihisa Tomita (NEC)			
9:00	Sequential Attack with Intensity Modulation on the Differential-Phase-Shift Quantum Key Distribution Protocol	Toyohiro Tsurumaru	Mitsubishi Electric Corporation, Information Technology R&D Center
9:20	Key rate of QKD with hashed two-way classical communication	Shun Watanabe[a], Ryutaroh Matsumoto[a], Tomohiko Uyematsu[a], Yasuhito Kawano[b]	a: Tokyo Institute of Technology, b:NTT Communication Science Labs.
9:40	Unconditional security of Bennett 1992 quantum key-distribution scheme with strong reference pulse	Kiyoshi Tamaki[a,b], Norbert Lutkenhaus[c,d], Masato Koashi[b,e], Jamie Batuwantudawe[c]	a:NTT Basic Research Labs., b:JST CREST, c:Univ. of Waterloo, d:Erlangen-Nurmburg Univ, e:Univ. of Osaka
10:00	Break		
Session 7 Chair: Masato Koashi (Osaka Univeristy)			
10:20	Theoretical security analysis on quantum key distribution based on decoy method	Masahito Hayashi	JST ERATO-SORST Quantum Computation and Information Project
10:40	Numerical Analysis of Decoy State Quantum Key Distribution with Unconditional Security Incorporating Finite Statistics	Jun Hasegawa[a,b], Masahito Hayashi[a], Tohya Hiroshima[a,c], Akihisa Tomita[a,c]	a:JST ERATO-SORST Quantum Computation and Information Project, b:Univ. of Tokyo, c:Fundamental and Environmental Research Labs., NEC
11:00	Proof-of-principle experiment of 80km quantum key distribution with a heralding single photon source	Tsuyoshi Nishioka[a], Alexandre Soujaeff[b], Toshio Hasegawa[a], Hirokazu Ishizuka[a], Toyohiro Tsurumaru[a], Jun'ichi Abe[a], Shigeki Takeuchi[b]	a:Mitsubishi Electric Corp, b:Hokkaido Univ.,JST
11:20	Break		
Session 8 Chair: Harumichi Nishimura (Osaka Prefecture University)			
11:40	(Tutorial talk) Progress in Computational Quantum Cryptography	Takeshi Koshiba	Saitama Univ.
12:30	Lunch		
13:30	Poster Session		
Session 9 Chair: Nobuyuki Imoto (Osaka University)			
15:00	The Fisher information on the quantum Gaussian model and violation of the scale invariance	Fuyuhiko Tanaka	Univ. of Tokyo
15:20	Information gain and approximate reversibility of quantum measurements:an entropic approach	Francesco Buscemi[a], Masahito Hayashi[a], Michal Horodecki[b]	a:JST, b:Univ. of Gdansk
15:40	Teleportation of unknown entnagled states without extra resources and its application to LOCC estimation	Keiji Matasumoto	NII, JST
16:00	Break		
Session 10 Chair: Masaki Nakanishi (NAIST)			
16:20	Unbounded-Error One-Way Classical and Quantum Communication Complexity	Kazuo Iwama[a], Harumichi Nishimura[b], Rudy Raymond[c], Shigeru Yamashita[d]	a:Kyoto Univ., b:Osaka Prefecture Univ., c:IBM Japan, d:NAIST
16:40	Resource evaluations of quantum circuits for order-finding using $2n+O(1)$ qubits	Eri Koseki[a],Noboru Kunihiro[a],Yasuhiro Takahashi[b], Kazuo Ohta[a]	a:Univ. of Electro-Communications, b:NTT Communication Science Labs
17:00	Relationships between quantum circuit complexity and the number of controled NOT gates, and ancillary qubits	Teruhito Aoki[a], Seiya Okubo[a], Yasuki Kakishita[a], Tetsuro Nishino[b]	a:Graduate School of Electro-Communications, Univ. of Electro-Communications, b:Department of Information and Communication Engineering, Univ. of Electro-Communications
17:20	Closing address		

QIT16 Program Poster session (Friday, 18 May 2007, 13:30 – 15:00)

No.	Title	Author(s)	Affiliation(s)
1	Non-Markovian Error of Gate Operation in Nuclear Spin System coupling with Lattice	Daisuke Aratsu	Osaka Univ.
2	Two-photon nonlinear dynamics by induced absorption in a many-atom cavity QED system	Akira Ishikawa[a], Toshiro Isu[b,c], Hajime Ishihara[d,a]	a:JST CREST, b:Univ. of Tokushima, c:NICT, d:Osaka Prefecture Univ.
3	Canonical correspondence between information fiber on output states of one-parameter channel and Kraus representations.	Hiroshi Imai	Osaka Univ., Graduate School of Science
4	Generation and detection of continuous variable entanglement using pulse laser	Ryuhi Okubo[a], Tatsuya Furuta[a], Yun Zhang[a,b], Takuya Hirano[a,b]	a:Department of Physics Gakushuin Univ., b:JST CREST
5	Measurement of quantum efficiency of a single-photon detector by bidirectional coincidence counting of correlated photon pairs	Satoru Odate[a,b], Akio Yoshizawa[a,b], Daiji Fukuda[a,b], Hidemi Tsuchida[a,b]	a:AIST, b:JST
6	Evolution of residual energy on a neuromorphic adiabatic quantum computation algorithm	Aiko Ono[a], Sigeo Sato[a], Mitunaga Kinjo[b], Koji Nakajima[a]	a: Laboratory for Nanoelectronics and Spintronics Research Institute Communication, Tohoku Univ., b: Department of electrical and electronic engineering, Univ. of the Ryukyus
7	Two-way classical communications remarkably improve local distinguishability of entangled states	Masaki Owari[a], Masahito Hayashi[a,b]	a:Univ. of Tokyo, b:JST
8	Gap-definability and BQP	Yasuhito Kawano	NTT Communication Science Labs.
9	Quantum interfaces based on optical emission from a quantum dot molecule	Akihiro Kirihara[a,b], Shunsuke Kono[a,b], Akihisa Tomita[a,c], Shinichi Yorozu[a,b]	a: NEC corporation, b: CINQIE, c: JST ERATO-SORST Quantum Computation and Information Project
10	Analysis for quantum feedback control systems by continuous measurement	Tomotake Sasaki, Tomonari Abe, Shinji Hara	Univ. of Tokyo
11	Non-Markovian Dynamics and Entanglement of Quantum Brownian Particles	Kazutomu Shiokawa	National Center for Theoretical Sciences
12	Controllable Coupler for Flux Qubits	Yoshihiro Shimazu, Takashi Niizeki, Zenpei Wada	Yokohama National Univ.
13	An Single Photon Detection Circuit with Automatic Charge pulse Canceller for a High-speed Quantum Cryptosystem	Seigo Takahashi[a], Akio Tajima[a], Akihisa Tomita[b,c]	a:NEC System Platforms Res. Labs., b:NEC Nano Electronics Res. Labs., c:JST ERATO-SORST Quantum Computation and Information Project
14	Incompatibility between distinguishing particle path and producing interference pattern in the double-slit experiment	Shogo Tanimura	Kyoto Univ.
15	Free-space continuous-variable quantum cryptography	Shingo Tokunaga[a], Kazuya Shirasaki[a], Takuya Hirano[a,b]	a:Gakushuin Univ., b:JST CREST
16	Markovian Master Equations for 2-qubits System	Masatoshi Nakatani, Tetsuo Ogawa	Osaka Univ.
17	Quantum Encoder and Decoder for Practical Quantum Key Distribution Using a Planar Lightwave Circuit	Yoshihiro Nambu[a], Ken'ichiro Yoshino[a], Akihisa Tomita[a,b]	a: Nanoelectronics Res. Labs., NEC, b:JST ERATO-SORST Quantum Computation and Information Project
18	Stabilizing Control of Spin Systems Despite Feedback Delay	Kazunori Nishio, Kenji Kashima	Tokyo Institute of Technology
19	Quantum Property Testing of Group Solvability	Yoshifumi Inui[a,b], Francois Le Gall[b]	a:Univ. of Tokyo, b:JST ERATO-SORST Quantum Computation and Information Project
20	Annealing Schedules for Quantum Annealing	Satoshi Morita, Hidetoshi Nishimori	Tokyo Institute of Technology
21	Visualization of superposition of macroscopically distinct states	Tomoyuki Morimae, Akira Shimizu	Univ. of Tokyo
22	Implementation of Time-bin Coding for Quantum Key Distribution Using Dual-drive Mach-Zehnder Modulator	Ken-ichiro Yoshino[a], Akihiro Tanaka[b], Yoshihiro Nambu[a], Akio Tajima[b], Akihisa Tomita[a,c]	a:NEC Nano Electronics Research Labs., b:NEC System Platforms Research Labs., c:JST ERATO-SORST Quantum Computation and Information Project