

QIT18 Program

May 22 (Thu.), 2008

Time	Title	Speaker	Affiliation
9:25-9:30 Opening			
9:30-10:50	Session I	Chair Satoshi Ishizaka (NEC)	
9:30-9:50	Quantum state discrimination with error margin	A. Hayashi, T. Hashimoto, and M. Horibe	Univ. of Fukui
9:50-10:10	Discrimination of pure and mixed states using homodyne detection	Toru Kawakubo, Katsuji Yamamoto	Kyoto Univ.
10:10-10:30	Improvement of quantum cryptography utilizing pseudo-single-photon sources	Yoritoshi Adachi, Takashi Yamamoto, Masato Koashi, Nobuyuki Imoto	Osaka Univ., JST-CREST
10:30-10:50	Security of entanglement-based QKD with practical detectors	Masato Koashi, Takashi Yamamoto, Yoritoshi Adachi, Nobuyuki Imoto	Osaka Univ., JST-CREST
10:50-11:10 Break			
11:10-12:30	Session II	Chair Toshio Oshima (Fujitsu Laboratories LTD)	
11:10-11:50	Generating secure keys from partially secret information<Invited Talk>	Robert König	California Institute of Technology
11:50-12:10	Exact minimum and maximum of yield with a finite number of decoy light intensities	Toyohiro Tsurumaru[a], Alexandre Soujaeff[b], Shigeki Takeuchi[b]	a:Mitsubishi Electric Corporation, Information Technology R&D Center, b:JST-CREST/Research Institute for Electronic Science, Hokkaido University
12:10-12:30	SECURITY PROOF OF QUANTUM KEY DISTRIBUTION WITH DETECTION EFFICIENCY MISMATCH	Chi-Hang Fred Fung[a], Kiyoshi Tamkai[b], Bing Qi [c], Hoi-Kwong Lo[c], Xiongfeng Ma [c]	a: University of Hong Kong, b:NTT, c:University of Toronto,
12:30-13:30 Lunch			
13:30-15:30 Poster Session			
15:30-17:10	Session III	Chair Kazuhiro Igeta (NTT Basic Research Laboratories)	
15:30-16:10	Trends of quantum cryptography using satellites<Invited Talk>	Morio Toyoshima, Christian Schaefer, Yozo Shoji, Yoshihisa Takayama, Hiroo Kunimori, Masahiro Takeoka, Mikio Fujiwara, and Masahide Sasaki	NICT
16:10-16:30	97-km QKD field trial using PLC-based interferometers, SSPDs and WDM synchronization	Ken-ichiro Yoshino [a], Mikio Fujiwara [b], Sae Woo Nam [c], Yoshihiro Nambu [a], Akihiro Tanaka [a], Seigo Takahashi [a], Wakako Maeda [a], Shigehito Miki [b], Burm Baek [c], Zhen Wang [b], Akio Tajima [a], Akihisa Tomita [a, d], Masahide Sasaki [b]	a:NEC, b:National Institute of Information and Communications Technology, c:National Institute of Standard and Technologies, d:Japan Science and Technology Agency
16:30-16:50	Generation and Distribution of High Quality Telecom-Band Polarization-Entangled Photon-Pairs	Han Chuen Lim[a, b], Akio Yoshizawa[b, c], Hidemi Tsuchida[b, c], Kazuro Kikuchi[a]	a: Univ. of Tokyo, b: AIST, c: CREST, JST
16:50-17:10	Complete geometric universal single qubit operation on cold two-level atoms	Hirimitsu Imai, Atsuo Morinaga	Tokyo Univ. of Science
18:00- 20:00 Banquet			

QIT18 Program

May 23 (Fri.), 2008

Time	Title	Speaker	Affiliation
9:10-10:50 Session IV Chair Akihisa Hayashi (Fukui University)			
9:10-9:30	Entanglement estimation with continuous variable Bell measurement	Akira Kitagawa[a], Masahiro Takeoka[b,c], Masahide Sasaki[b,c], Anthony Chefles[d]	a:Ritsumeikan Univ., b:NICT, c:CREST, d:Hewlett Packard
9:30-9:50	Existence of NPPT Bound Entanglement	Tohya Hiroshima	ERATO-SORST, JST
9:50-10:10	Entanglement properties in an atomic ensemble storing a squeezed state of light	Kaoru Shimizu, Daisuke Hashimoto	NTT Basic Research Laboratories, NTT Corporation
10:10-10:30	Quantum feedback control of the photon number state	Shinsuke Fujisawa[a], Takahiro Sagawa[a], Masahito Ueda[a, b]	a:Univ. of Tokyo, b:JST, ERATO
10:30-10:50	Analysis of photon counting method with lambda-type atoms	Takeshi Kobayashi, Katsuji Yamamoto	Kyoto University
10:50-11:10 Break			
11:10-12:30 Session V Chair Shiro Kawabata (AIST)			
11:10-11:50	Cavity-QED with Quantum Superconducting Circuits<Invited Talk>	Kouichi Semba	NTT Basic Research Laboratory
11:50-12:10	Generation of entanglement in nuclear spins of single NV center in diamond	N. Mizuochi [a, d], P. Neumann [b], R. Florian [b], T. Gaebel [b], H. Watanabe [c], J. Isoya [a], S. Yamasaki [d], F. Jelezko [b], J. Wrachtrup [b]	a:Univ. of Tsukuba, b:Stuttgart Univ., c:DRC AIST, d:Nanotech AIST
12:10-12:30	Experimental Test of Quantum Contextuality with Unentangled Photons	Yoshihiro Nambu	Nano Electronics Research Laboratories, NEC
12:30-14:00 Lunch			
14:00-15:20 Session VI Chair Fumiaki Morikoshi (NTT Basic Research Laboratories)			
14:00-14:20	Quantum Energy Teleportation	Masahiro Hotta	Tohoku University
14:20-14:40	Quantum catalysis of information	Koji Azuma [a], Masato Koashi [a, b], Nobuyuki Imoto [a, b]	a: Osaka Univ., b: JST-CREST
14:40-15:00	Second Law of Thermodynamics with Discrete Quantum Feedback Control	Takahiro Sagawa [a], Masahito Ueda [a, b]	a: Univ. of Tokyo, b: ERATO-JST
15:00-15:20	Fault-tolerant quantum computation in concatenation of verified cluster states	Keisuke Fujii, Katsuji Yamamoto	Kyoto Univ.
15:20-15:40 Break			
15:40-17:20 Session VII Chair Nobuyuki Imoto (Osaka University)			
15:40-16:20	Quantum Private Queries<Invited Talk>	Seth Lloyd	Massachusetts Institute of Technology
16:20-16:40	Claw Finding Algorithms Using Quantum Walk	Seiichiro Tani [a, b]	a: JST ERATO-SORST QCI Project, b: NTT Communication Science Labs.
16:40-17:00	Cheon's anholonomies in Floquet operators and its application to quantum computation	Atushi TANAKA [a], Manabu Miyamoto [b]	a:Tokyo Metropolitan Univ., b:Waseda Univ.
17:00-17:20	Analytic construction of holonomic quantum gates in an Ising-type dimer-chain model	Yukihiro Ota [a], Masamitsu Bando [b], Yasushi Kondo [b], Mikio Nakahara [b]	a: Interdisciplinary Graduate School of Science and Engineering, Kinki University, b: Department of Physics, Kinki University
17:20-17:25 Closing			

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13:30-15:30

Poster

1	Entanglement generation using silicon wire waveguide	Hiroki Takesue[a, c], Hiroshi Fukuda[b], Tai Tsuchizawa[b], Toshifumi Watanabe[b], Koji Yamada[b], Yasuhiro Tokura[a, c], Sei-ichi Itabashi[b]	a: NTT Basic Research Laboratories, b: NTT Microsystem Integration Laboratories, c: JST CREST
2	On the composability of biased quantum coin flipping	Satoshi Ishizaka	NEC
3	Complexity Theoretic Characterization of Quantum One-Way Permutation	Kouji Tohda, Takeshi Koshiba	a: Graduate School of Science and Engineering, Saitama University
4	Efficiency of Quantum Identity Testing of Multiple States	Masaru Kada [a], Harumichi Nishimura [a], Tomoyuki Yamakami [b]	a: Osaka Pref. Univ., b: Univ. of Aizu
5	Visualization of Quantum Process	Yu Watanabe [a], Takahiro Sagawa [b], Masahito Ueda [b, c]	a: Tokyo Institute of Technology, b: Univ. of Tokyo, c: JST-ERATO
6	Optimal control of linear quantum systems despite feedback delay	Kazunori Nishio, Kenji Kashima, Jun-ichi Imura	Tokyo Institute of Technology
7	Proposal of an eavesdropping experiment for BB84 protocol with 1-3 phase-covariant quantum cloning	Yuta Okubo[a, b], Francesco Buscemi[b], Akihisa Tomita[b]	a: Univ. of Tsukuba, b: ERATO-SORST Quantum Computation and Information Project, JST
8	Decoy-state quantum cryptography with source errors	Xiang-Bin Wang, Cheng-Zhi Peng, Jun Zhang, Lin Yang, and Jian-Wei Pan	Tsinghua University and Imai project, ERATO-SORST, JST
9	Weak convergence theorems for quantum walks driven by many coins	Etsuo Segawa, Norio Konno	Department of Engineering, Yokohama National University
10	Measurement of Superconducting Flux Qubit with Controllable Energy Gap	Yoshihiro Shimazu, Yuuki Saito, Zenpei Wada	Yokohama National University
11	Multi-level quantum secret sharing with mutually (un)biased bases	I-Ching Yu, Feng-Li Lin, Ching-Yu Huang	National Taiwan Normal University
12	Derivation of an intrinsic detection sensitivity of a Geiger mode APDs detector	Kiyotaka Hammura, David Arfon Williams	Hitachi Cambridge Laboratory
13	Time-domain measurement of entangled pulse using high-speed homodyne detector	Ryui Okubo[a], Mayumi Hirano[a], Yun Zhang[b], Takuya Hirano[a, b]	a: Department of Physics Gakushuin University, b: CREST, Japan Science and Technology Agency
14	A Method of Reducing Communication Costs for a Quantum Computer Simulator on a Distributed Memory Parallel Computer	Akihiro SHIBATA, Takashi NAKADA, Masaki NAKANISHI, Shigeru YAMASHITA, and Yasuhiko NAKASHIMA	Nara Institute of Science and Technology
15	A physical realization of quantum teleportation for non-maximal entangled state	Yoshiharu Tanaka[a], Masanari Asano[a], Masanori Ohya[a]	a: Tokyo Univ. of Science
16	On Entanglement in Many-Body Systems with Exchange Symmetry	Tsubasa Ichikawa [a], Toshihiko Sasaki [a], Izumi Tsutsui [b], Nobuhiro Yonezawa [a]	a: Univ. of Tokyo, b: KEK
17	Local expansion of a polarization entangled W state: $W_N \rightarrow W_{(N+1)}$	Toshiyuki Tashima[a], Sahin Kaya Ozdemir[a, b], Takashi Yamamoto[a], Masato Koashi[a], Nobuyuki Imoto[a]	a: Univ. of Osaka, CREST, b: ERATO
18	Entanglement Dynamics in Quantum Brownian Motion	Kazutomu Shiokawa	Institute of Physics, Academia Sinica
19	Two-temperature states	Jonas Söderholm, Shuichiro Inoue	Institute of Quantum Science, Nihon University
20	Switching dynamics of high-Tc Josephson junctions	S.Kashiwaya, H.Kashiwaya, T. Matsumoto, H. Shibata, S. Kawabata	AIST