

**QIT15 Program**

Nov 21st(Tue), 2006

Time	Title	Speaker	Affiliation
9:15- 9:20 Opening			
9:20- 10:20 <b>Session I</b> <b>Chair Masanao Ozawa (Tohoku University)</b>			
	Jarzynski Equality with Maxwell's Demon	Takahiro Sagawa, Masahito Ueda	Tokyo Institute of Technology
	Time-optimal Quantum evolution of mixed states	Alberto Carolini[a], Akio Hosoya[a], Tatsuhiko Koike[b], Yosuke Okudaira[a]	a: Tokyo Institute of Technology, b: Keio University
	Reconsidering the Thermodynamical Limit of Information Erasure	Kazuhiro Igeta	NTT Basic Research Laboratories
10:40- 12:20 <b>Session II</b> <b>Chair Kouichi Semba (NTT Basic Research Laboratories)</b>			
	Niobium nitride (NbN) superconducting nanowire single photon detector <Tutorial>	Zhen Wang, Shigehito Miki, Mikio Fujiwara, Masahide Sasaki	NICT
	Proposal for QND-measurement of photon-arrival with an atom-cavity system	Kunihiro Kojima [a], Akihisa Tomita [a]	a: ERATO-SORST Quantum Computation and Information Project, JST
	High speed single-photon detection at 1550nm using a sinusoidal gating	Naoto Namekata [a], Gou Hujii [a], Shinji Sasamori [a], Shuichiro inoue [a]	a: Nihon Univ.
	Investigation of squeezed vacuum states by estimating photon statistics	Yuta Takahashi [a, b], Naoto Namekata [a], Jonas Soderholm [a], Susumu Machida [a], Shuichiro Inoue [a], Shinichi Komatsu [b], Sunao Kurimura [c]	a:Nihon Univ., b:Waseda Univ., c:NIMS
12:20- 13:20 Lunch			
13:20- 14:40 <b>Session III</b> <b>Chair Kaoru Shimizu (NTT Basic Research Laboratories)</b>			
	Improvement of decoy method and its security analysis	Masahito Hayashi[a], Akihisa Tomita[a, b], Tohya Hiroshima[a, b], Jun Hasegawa[a, c]	a:ERATO-SORST Quantum Computation and Information Project, JST, b: NEC, c:Unv. of Tokyo
	Development of modulator-free PLC quantum key distribution system	Yoshihiro Nambu[a], Ken' ichiro Yoshino[a], and Akihisa Tomita[b]	a:Fundamental &Environmental Res. Labs., NEC, b:ERATO-SORST Quantum Computation and Information Project, JST
	Unconditional security of an efficient QKD system composed of practical devices	Masato Koashi	Osaka Univ., CREST
	Efficient quantum key distribution with parametric down-conversion	Yoritoshi Adachi [a, b], Takashi Yamamoto [a, b], Masato Koashi [a, b, c], Nobuyuki Imoto [a, b, c]	a:Osaka Univ., b:JST-CREST, c:JST-SORST
14:40- 16:10 <b>Poster Session</b>			
16:10- 17:50 <b>Session IV</b> <b>Chair Takuya Hirano (Gakushuin University)</b>			
	Advances in physics and growth of quantum dots for quantum information technology <Invited Talk>	Yasuhiko Arakawa	Research Center for Advanced Science and Technology, University of Tokyo
	Entangled-photon generation in biexcitonic cavity QED	Hiroshi Ajiki [a], Hajime Ishihara [b]	a: Osaka Univ., b: Osaka Prefecture Univ.
	Controllable Coupling between Flux Qubit and Nanomechanical Resonator by Magnetic Field	Fei Xue[a], Y.D Wang [a], C.P.Sun [a], H. Okamoto [b], H. Yamaguci [b], K. Semba [b]	a. Institute of Theoretical Physics, Chinese Academy of Sciences, China; b. NTT Basic Research Laboratories, NTT Corporation, Atsugi-shi, Kanagawa, Japan
	Quantum dynamics of electron-nuclei coupled system in quantum dots	Ozgur Cakir[a], Toshihide Takagahara[a,b]	a:CREST, Japan Science and Technology Agency, b:Kyoto Institute of Technology
18:00- 20:00 Banquet			

## QIT15 Program

Nov 22nd (Wed), 2006

Time	Title	Speaker	Affiliation
<b>9:10- 10:50 Session V Chair Satoshi Ishizaka (NEC, JST PRESTO)</b>			
	Are quantum correlations symmetric? <Invited talk>	Karol Horodecki, Michał Horodecki, Paweł Horodecki	University of Gdansk
	Optimal Gaussian cloning and Gaussian cloning of known-phase coherent states	Ryo Namiki, Masato Koashi, Nobuyuki Imoto	JST-CREST, Osaka Univ.
	Monogamy inequality for distributed Gaussian entanglement	Tohya Hiroshima[a], Gerardo Adesso[b], Fabrizio Illuminati[c]	a:ERATO-SORST Quantum Computation and Information Project, JST, b:University of Cambridge, c:Universita degli Studi di Salerno
	Entanglement evaluation with entanglement-assisted coding channel	Akira Kitagawa [a, b], Masahiro Takeoka [a, b], Masahide Sasaki [a, b]	a:NICT, b:CREST
<b>11:10- 12:10 Session VI Chair Harumichi Nishimura (Osaka Prefecture University)</b>			
	Quantum Digital Signature whose Signature is Broken by the Verification	Go Kato, Yasuhiro Kawano	NTT
	Cheat-sensitive oblivious transfer protocols assisted by quantum communication channels	Kaoru Shimizu [a], Nobuyuki Imoto [b]	a: NTT Basic Research Laboratories, b: Graduate School of Engineering Science, Osaka University
	Quantum Online Space Complexity	Francois Le Gall	ERATO-SORST Quantum Computation and Information Project, JST
<b>12:10- 13:10 Lunch</b>			
<b>13:10- 14:50 Session VII Chair Masahito Hayashi (ERATO-SORST QCI Project)</b>			
	On the Properties of Entanglement Measures <Invited Talk>	Matthias Christandl	University of Cambridge
	Quantum Error Correction using Quantum Feedback	Keisuke Fujii[a], Katsuji Yamamoto[a]	Kyoto University
	N-body-extended Channel Estimation for Low-Noise Parameters	Masahiro Hotta[a], Tokishiro Karasawa[a], Masanao Ozawa[a]	a:Tohoku University
	Optimal estimation of an observable's expectation value for pure states which minimizes mean error for general measure of deviation	Minoru Horibe, Akihisa Hayashi, Tkaaki Hashimoto	Univ. of Fukui
<b>15:10- 16:10 Session VIII Chair Akira Kitagawa (NICT)</b>			
	Reversible quantum measurement with arbitrary spins	Hiroaki Terashima [a, b], Masahito Ueda [a, b]	a:Tokyo Inst. Tech., b:JST-CREST
	Development of optimal control simulation for analyzing the mechanism of decoherence suppression	Yukiyoshi Ohtsuki	Tohoku Univ., JST-CREST
	Influence of Decoherence on Qubit Entangling via Harmonic Oscillator	Hayato Nakano	NTT Basic Research Laboratories
<b>16:30- 17:30 Session IX Chair Hayato Nakano (NTT Basic Research Laboratories)</b>			
	Semiclassical evaluation of two-photon cross-kerr effect	Kazuki Koshino	Wakayama Univ., JST PRESTO
	Characterization of a noisy quantum process by complementary classical operations	Holger F. Hofmann [a], Ryo Okamoto [b], Shigeki Takeuchi [b]	a: Hiroshima Univ., b: Hokkaido Univ.
	Accuracy Limit of Quantum NOT Gate Induced by Conservation Laws	Tokishiro Karasawa [a], Masanao Ozawa [a]	a:Tohoku University
<b>17:30- 17:35 Closing</b>			

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14:40- 16:10

**Poster (Hall 2F)**

1	Improved Plug & Play Quantum Key Distribution for High Speed and Long Distance Driving	Tsuyoshi Nishioka	Mitsubishi Electric Corporation
2	Broadcasting and Classical Information	G.Chiribella, G. M. D'Ariano, C. Macchiavello, P. Perinotti [a], F. Buscemi [b]	a: Univ. of Pavia, b: ERATO-SORST Quantum Computation and Information Project, JST
3	Study on Qubit Evolutionary Algorithm in NP-hard Problem	Shigeru Nakayama, Takahiro Imabeppu, Satoshi Ono	Kagoshima university
4	A quantum circuit for approximating the Jones polynomial	Yumi Nakajima [a], Yasuhito Kawano [a], Hiroshi Sekigawa [a]	NTT Communication Science Laboratories, NTT Corporation
5	Multi photon probability reduction of a heralded photon source for improved quantum key distribution	Tomoyuki Horikiri[a, b], Yuishi Takeno[a], Atsushi Yabushita[c], Takayoshi Kobayashi[b, c, d]	a:The Univ. of Tokyo, b:The University of Electrocommunications, c:National Chiao Tung University, d:Osaka University
6	off-diagonal geometric phase for mixed states in experiment of Franson interferometer	Yun-Kun Jiang[a], Jian Li[b], and Akihisa Tomita[a]	a:ERATO-SORST Quantum Computation and Information Project, JST, b: Southeast University, China
7	Nonlocality in unambiguous discrimination of three product states	Fumitaka Takenaga[a, b], Takashi Yamamoto[a, b], Masato Koashi[a, b, c], Nobuyuki Imoto[a, b, c]	a:Osaka Univ., b:JST-CREST, c:JST-SORST
8	Selective entanglement breaking	Yuma Kinoshita[a, b], Takashi Yamamoto[a, b], Masato Koashi[a, b, c], Nobuyuki Imoto[a, b, c]	a:Osaka Univ., b:JST-CREST, c:JST-SORST
9	Theory of two-photon phase shifts by the induced absorption in cavity QED systems	Akira Ishikawa [a], Toshiro Izu [b, c], Hajime Ishihara[a, d]	a:CREST-JST, b:NICT, c:Tokushima University, d:Osaka Prefecture University
10	Towards single-mode atom-chip circuits for quantum information processing	Tetsuya Mukai [a, c], Christoph Hufnagel [a, c], Kouichi Semba [a], Fujio Shimizu [a, b, c, d]	a:NTT, b:UEC, c:JST-CREST, d:21st COE
11	Experiment of 2-photon Interference at 1.5um Using Planar Lightwave Circuit and PPLN Waveguide	Ken-ichiro Yoshino[a], Yoshihiro Nambu[a], Akihisa Tomita[a, b]	a:NEC, b:JST
12	The proposal for quantum computaion with Yb atoms in an optical trap	Kosuke Shioda[a], Shinya Kato[a], Atsushi Yamaguchi[a], Satoshi Uetake[b], Yoshiro Takahashi[a, c]	a: Kyoto University, b:CREST, Japanese Science and Technology Agency
13	Required characteristics of linear mode silicon avalanche photodiode toward photon-number resolving detector	Kenji Tsujino, Makoto Akiba, Masahide Sasaki	NICT
14	Quantum Authentication using Quantum Sealing	Masatosi Taketani Masaki Nakanisi Shigeru Yamasita Yasuhiko Nakasima	Nara Institute of Sciences and Technology
15	Development of a high quantum efficiency photon counter using a silicon avalanche photodiode	Makoto Akiba, Kenji Tsujino, Masahide Sasaki	NICT
16	Effects of unbound two-exciton states on the entangled-photon generation in biexcitonic cavity QED	Hisaki Oka [a], Hajime Ishihara [a, b]	a: Osaka Prefecture University, b: CREST-JST
17	Entanglement for unitary transformed thermal states in liquid state NMR with the chemical shift	Yukihiro Ota, Syuji Mikami, Ichiro Ohba	Department of Physics, Waseda University
18	Generation of Type II correlated photon in optical telecommunication band	Go Fujii [a], Masayuki Motoya [a], Naoto Namekata [a], Sunao Kurimura [b], Shuichiro Inoue [a]	a:Nihon University, b:National Institute for Materials Science
19	Quantum Oracle Computation with Pure Dephasing	Shigeru Yamashita[a], Masaki Nakanishi[a], Chikako Uchiyama[b], Masaki Aihara[a]	a:Nara Institute of Science and Technology, b:University of Yamanashi
20	Trade-off between Information Gains and Detection Rates in Quantum String Sealing Protocols	Masaki Nakanishi [a], Seiichiro Tani [b], Shigeru Yamashita [a]	a: Nara Institute of Science and Technology, b: NTT Communication Science Laboratories
21	Inseparability criteria based on moments of annihilation and creation operators.	Adam Miranowicz [a, b], Marco Piani [b], Pawel Horodecki [b], Ryszard Horodecki [b]	a: Univ. of Poznan, b: Univ. of Gdansk (Poland)
22	Optical state engineering and teleportation using multiport interferometry.	Adam Miranowicz [a, b, c], S. Kaya Ozdemir [b, c, d], Masato Koashi [b, c, d], Nobuyuki Imoto [b, c, d]	a: Univ. of Poznan, b: SORST, c: Univ. of Osaka, d: CREST
23	On impossibility of distillation of shared randomness from 2-dimensional Werner state	Keiji Matsumoto	NII
24	Exprimental realization of quantum leader election on linear optics	Yuta Okubo[a, b], Xiang-Bing Wang[a], Akihisa Tomita[a]	a:ERATO-SORST Quantum Computation and Information Project, JST, b:Tsukuba University