

QIT22 Program

May 10th (Mon), 2010

Time	Title	Speaker	Affiliation
9:50- 10:00	Opening		
10:00- 11:40	Session I	Chair Masato Koashi (Osaka University)	
10:00- 10:40	Quantum key distribution using homodyne detection <Tutorial>	Takuya Hirano	Gakusyuin University
10:40- 11:00	Performance of hybrid entanglement photon pair source for quantum key distribution	Ken-ichiro Yoshino [a], Mikio Fujiwara [b], Morio Toyoshima [b], Masahide Sasaki [b], Yoshihiro Nambu [a], Akihisa Tomita [a]	a:NEC, b:NICT
11:00- 11:20	Quantum circuit for security proof of quantum key distribution without encryption of error syndrome and noisy processing	Kiyoshi Tamaki [a,b], Go Kato [c]	a: NTT BRL, B: CREST, C: NTT CS
11:20- 11:40	Quantum Key Search on the Even-Mansour Cipher	Hideori Kuwakado [a], Masakatu Morii [a]	a:Kobe University
11:40- 13:00	Lunch		
13:00- 14:30	Poster Session		
14:30- 15:50	Session II	Chair Masahiro Takeoka (NICT)	
14:30- 15:10	Control of light-matter interaction for quantum information devices <Invited talk>	Hajime Ishihara	Osaka Prefecture University
15:10- 15:30	Generation of photon pairs with controlled frequency entanglement via quasi-phase matching	Ryosuke Shimizu [a], Keiichi Edamatsu [b]	a: PRESTO-JST, b:Tohoku Univ.
15:30- 15:50	Experimental demonstration of local expansion for photonic W states	Toshiyuki Tashima [a], Tsuyoshi Kitano [a], Sahin Kaya Ozdemir [b], Takashi Yamamoto [a], Masato Koashi [a], Nobuyuki Imoto [a]	a: Univ. of Osaka, b: Univ. of Washington in St. Louis
15:50- 16:10	Coffee Break		
16:10- 17:30	Session III	Chair Shigeki Takeuchi (Hokkaido University/Osaka University)	
16:10- 16:30	Initialization of molecular nuclear spin quantum computer with dynamic nuclear polarization using photoexcited triplet electrons	Makoto Negoro[a], Kenichiro Tateishi[a], Akinori Kagawa [a], Masahiro Kitagawa[a]	a:Osaka University
16:30- 16:50	Topological Quantum Computing with p-wave Superfluid	Mikio Nakahara, Tetsuo Ohmi	Kinki University
16:50- 17:10	Quantum Dynamics of a Josephson junction after the voltage state transition	Hayato Nakano	NTT Basic Research Laboratories
17:10- 17:30	Spatial quantum coherence effects on pairwise spin entanglement in a nearly critical quantum spin chain	Kaoru Shimizu, Yasuhiro Tokura, Akira Kawaguchi	NTT Basic Research Laboratories
18:00- 20:00	Banquet		

QIT22 Program

May 11th(Tue), 2010

Time	Title	Speaker	Affiliation
9:20– 10:40 Session IV Chair Harumichi Nishimura (Osaka Prefecture University)			
9:20–9:40	Quantum Circuit for Quantum Bioinformatic Database Search Algorithm	Yuji Tanaka[a], Tsubasa Ichikawa[a], Masato Tada-Umezaki[a], Yukihiko Ota[a], Mikio Nakahara[a]	a:Univ. of Kinki
9:40–10:00	NPT bound entanglement – revisited	Tohya Hiroshima	JST ERATO–SORST
10:00–10:20	A SU(N) Wigner characteristic function for N-dimensional systems	Todd Tilma [a], Kae Nemoto [a]	a: NII
10:20–10:40	A Study of Generic characteristics of transmission delay in The Quantum Teleportation	Dan Murakami[a]	a:Graduate School of Tamagawa University
10:40– 11:00 Coffee Break			
11:00– 12:20 Session V Chair Masahiro Kitagawa (Osaka University)			
11:00– 11:40	Operator Algebraic Methods in Quantum Error Correction <Tutorial>	Tomohiro Ogawa	Graduate School of Information Systems
11:40– 12:00	Asymptotic theory for quantum channel estimation	Masahito Hayashi	Tohoku University, Centre for Quantum Technologies, National University of Singapore
12:00– 12:20	An Efficient Quantum Algorithm for some Instances of the Group Isomorphism Problem	Francois Le Gall [a]	a:The University of Tokyo
12:20– 13:40 Lunch			
13:40– 15:00 Session VI Chair Nobuyuki Imoto (Osaka University)			
13:40– 14:20	A few topics on quantum geometric phases <Invited talk>	Masao Kitano	Kyoto University
14:20– 14:40	Quasi-determinism of weak measurement statistics: Laplace's demon's quantum cousin	Holger F. Hofmann [a, b]	a: Hiroshima University, b: JST CREST
14:40– 15:00	Resolution and back-action of a quantum measurement realized by two-mode-interference	Masataka Iinuma, Yutaro Suzuki, Gen Taguchi, Yutaka Kadoya, and Holger F. Hofmann	Hiroshima University
15:00– 15:20 Coffee Break			
15:20– 16:20 Session VII Chair Ryosuke Shimizu (PRESTO–JST)			
15:20– 15:40	Realization of a near-optimal discrimination of coherent signals and the projection measurements onto coherent state superpositions using a TES	Masahiro Takeoka [a], Kenji Tsujino [a, b], Daiji Fukuda [c], Go Fujii [c, d], Shuichiro Inoue [d], Mikio Fujiwara [a], Masahide Sasaki [a]	a: NICT, b: JST ERATO–SORST, c: AIST, d: Nihon University
15:40– 16:00	Invariance of the bit error rate in the ancilla-assisted homodyne detection	Yusuke Yoshida, Masahiro Takeoka, and Masahide Sasaki	NICT
16:00– 16:20	Demonstration of photon detection based on sub-Geiger mode InGaAs APD	Kenji Tsujino [a], Yoshito Miyamoto [b], Jun Kataoka [b], Akihisa Tomita [a]	a:JST ERATO–SORST, b:Univ. of Waseda
16:20– 16:25 Closing			

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13:00- 14:30

Poster (3F Main conference room)

Number	Title	Speaker	Affiliation
1	Accidental coincidence counts observed in 4-photon Mandel-dip measurement at 1550 nm	Akio Yoshizawa [a,b], Yinghong Xue [a,b], Hidemi Tsuchida [a,b]	a:AIST, b:JST-CREST
2	Experiment of Entanglement Swapping Based on Polarization-entangled Photon Pairs in the telecom band	Yinghong Xue [a,b], Akio Yoshizawa [a,b], Hidemi Tsuchida [a,b]	a:AIST, b:JST-CREST
3	On Quantum Algorithm for EXPTIME Problem and Computational Complexity	Satoshi Iriyama [a], Masanori Ohya [a]	a:Tokyo University of Science
4	A Generalized Model of m-level Quantum Teleportation	Yoshiharu Tanaka[a], Masanari Asano[a], Masanori Ohya[a]	a:Tokyo Univ. of Science
5	Weak value in the classical stochastic process	Hiroyuki Tomita, Mikio Nakahara	Kinki University
6	On comparison of a classical algorithm and a quantum algorithm for a certain discrete logarithm problem	Yasuo Ohno, Yoshitaka Sasaki, Chika Yamazaki	Kinki University
7	Experimental Implementation of Continuous-Variable Quantum Key Distribution using a Single-Path Interferometer	Kazuhiro Murayama, Takako Ido, Satoshi Miyano, Takuya Hirano	Gakushuin University
8	Phase-conjugate-state pairs in entangled states	Ryo Namiki	Kyoto University
9	Macroscopic Quantum Tunneling and Synchronization in a Strong Coupling Intrinsic Junction	Yoichi Chizaki[a], Shiro Kawabata[a]	a:AIST
10	Sinusoidally gated InGaAs/InP avalanche photodiode operated in a low temperature regime	Taichi Kono[a], Naoto Namekata[a], Shuichiro Inoue[a]	a:Institute of Quantum Science, Nihon University
11	Measurement of coherent phase shift spectra in fiber-microsphere system at the single photon level	Akira Tanaka[a,b], Kiyota Tobaru[a,b], Masazumi Fujiwara[a,b], Ryo Okamoto[a,b], Shigeki Takeuchi[a,b]	a:RIES, Hokkaido Univ., b:ISIR, Osaka Univ.
12	Toward the realization of strong coupling cavity QED with microsphere-tapered-fiber coupled system 2	Masazumi Fujiwara[a,b], Kiyota Tobaru[a,b], Hong-Quan Zhao[a,b], Shigeki Takeuchi[a,b]	a:RIES, Hokkaido Univ., b:ISIR, Osaka Univ.
13	A study on degradation of transmission of optical nanofiber	Kiyota Tobaru[a,b], Masazumi Fujiwara[a,b], Shigeki Takeuchi[a,b]	a:RIES, Hokkaido Univ., b:ISIR, Osaka Univ.
14	Driving two qubits to a maximally entangled state by repetition of measurement and feedback on an ancilla qubit	Junya Okude [a], Kazuya Yuasa [b]	a:Waseda Univ., b:Waseda Inst. Adv. Study
15	Implementation on Ultra Parallel Processing Based on Spatial Modulation of Optical Properties	Kouichi Nitta, Takashi Kamiguku, Kenichiro Sakiori, Osamu Matoba	Kobe University