

QIT30 Program (May 12 Mon., 2013)

Place: Toyoda Auditorium/Symposion, Nagoya University

Time	Title	Speaker(s)	Affiliation(s)
9:45–9:50 [Opening]			
9:50–10:50 Session I		Chair: Izumi Tsutsui (KEK)	
	Uncertainty relation between angle and orbital angular momentum --- Interference experiment using electron vortex beams --- <i><Invited Talk></i>	Shogo Tanimura, Keisuke Watanabe	Nagoya Univ.
	Demonstration of high-resolution quantum optical coherence tomography by broadband frequency-correlated photon pairs	Masayuki Okano [a,b], Yuichi Nagamatsu [a,b], Akira Tanaka [a,b], Hwan Hong Lim [c], Ryo Okamoto [a,b], Norihiko Nishizawa [d], Sunao Kurimura [c], Shigeaki Takeuchi [a,b,e]	a: Hokkaido Univ., b: Osaka Univ., c: NIMS, d: Nagoya Univ., e: Kyoto Univ.
11:10–12:10 Session II		Chair: Tomohiro Ogawa (Univ. Elec.–Comm.)	
	LOCC Conversion via Entanglement Storage	Wataru Kumagai [a], Masahito Hayashi [b,c]	a: Kanagawa Univ., b: Nagoya Univ., c: NUS
	Highly-mixed measurement-based quantum computing and the one clean qubit model	Tomoyuki Morimae	Gunma Univ.
	On the convergence of output sets of quantum channels	Benoit Collins [a], Motohisa Fukuda [b], Ion Nechita [b]	a: Kyoto Univ., b: TU Muenchen
12:10–13:30 Lunch (80 min.)			
13:30–14:50 Poster Session			
14:50–16:10 Session III		Chair: Akihisa Tomita (Hokkaido Univ.)	
	Quantum key distribution: From fundamental research to construction of network <i><Invited Talk></i>	Kiyoshi Tamaki	NTT BRL
	Improved Asymptotic Key Rate of the B92 Protocol	Ryutaroh Matsumoto	Tokyo Tech.
	More Efficient Privacy Amplification with Non-Uniform Random Seeds via Dual Universal Hash Function	Masahito Hayashi [a], Toyohiro Tsurumaru [b]	a: Nagoya U., b: Mitsubishi Electric
16:30–18:10 Session IV		Chair: Toyohiro Tsurumaru (Mitsubishi Electric)	
	Problem with Interpretation of Trace Distance as Failure Probability in Quantum Key Distribution	Takehisa Iwakoshi, Osamu Hirota	Tamagawa Univ.
	Quantum key distribution protocol without monitoring disturbance	Toshihiko Sasaki [a], Yoshihisa Yamamoto [b,a], Masato Koashi [c]	a: RIKEN, b: NII, c: UTokyo
	Modified E91 protocol demonstration with hybrid entanglement photon source	Mikio Fujiwara [a], Ken-ichiro Yoshino [b], Yoshihiro Nambu [b], Taro Yamashita [a], Shigehito Miki [a], Hirotaka Terai [a], Zhen Wang [a], Morio Toyoshima [a], Akihisa Tomita [c], Masahide Sasaki [b]	a: NICT, b: NEC, c: Hokkaido Univ.
	Measurement-device-independent quantum key distribution for SARG04	Akihiro Mizutani [a], Kiyoshi Tamaki [b], Rikizo Ikuta [a], Takashi Yamamoto [a], Nobuyuki Imoto [a]	a: Osaka Univ., b: NTT
	Excess noise and transmittance in continuous variable quantum key distribution with discrete modulations	Tsubasa Ichikawa, Yasufumi Koike, Vanou Ishii, Takuya Hirano	Gakushuin Univ.
18:40–20:40 Banquet			

QIT30 Program (May 13 Tue., 2013)

時刻	タイトル	講演者	所属
9:20-10:20 Session V			
		Chair: Yutaka Shikano (IMS)	
	Direct Tomography of a Quantum Process via Weak or Strong Measurements	Yu-Xiang Zhang [a], Shengjun Wu [b], Zeng-Bing Chen [a]	a: USTC, b: NJU
	A weak-value model for virtual particles supplying the electric current in graphene	Kazuhiro Yokota, Nobuyuki Imoto	Osaka Univ.
	On the Interpretation of Weak Value and the Application of Weak Measurement for Precision Measurement	Izumi Tsutsui [a], Tatsuya Morita [b], Takuya Mori [b], Jaeha Lee [b]	a: KEK, b: Uni. Tokyo
10:40-12:00 Session VI		Chair: Masataka Iinuma (Hiroshima Univ.)	
	Aharonov Bohm Effect with Quantum Tunneling	Atsushi Noguchi [a], Yutaka Shikano [b], Kenji Toyoda [c], Shinji Urabe [c]	a: Univ. Tokyo, b: IMS, c: Osaka Univ.
	Hamiltonian engineering based on averaging Hamiltonian theory and optimal control theory	Makoto Negoro [a], Yutaka Tabuchi [b], Rai Suyama [a], Masahiro Kitagawa [a]	a: Osaka Univ., b: Univ. Tokyo
	Error-disturbance relations in mixed states	Masanao Ozawa	Nagoya Univ.
	Noise and disturbance in quantum measurements: an information-theoretic approach	Francesco Buscemi [a], Michael Hall [b], Masanao Ozawa [a], Mark Wilde [c]	a: Nagoya Univ., b: Griffith Univ., c: Louisiana State Univ.
12:00-13:20 Lunch (80 min.)			
13:20-15:00 Session VII		Chair: Keiichi Edamatsu (Tohoku Univ.)	
	Quantum annealing and its applications <Tutorial Invited Lecture>	Hidetoshi Nishimori	Tokyo Tech
	A reformulation of quantum mechanics by algorithmic randomness	Kohtaro Tadaki	Chuo Univ.
	Fault Tolerant Code Conversion and Its Use for Computational Cost Reduction	Byung-Soo Choi	U. of Tokyo
	Upper limit of the efficiency of heat engines with finite-size heat baths --- Refinement of Carnot's Theorem by information theory ---	Hiroyasu Tajima [a], Masahito Hayashi [b,c]	a: Univ. Tokyo, b: Univ. Nagoya, c: NUS
15:20-17:00 Session VIII		Chair: Fumiaki Morikoshi (NTT)	
	Asymptotic Entanglement Preservability of LOCC Conversions	Kosuke Ito [a], Wataru Kumagai [b], Masahito Hayashi [a]	a: Nagoya Univ., b: Kanagawa Univ.
	Mathematical analysis for ground state energies of quantum complex systems	Yuya Dan	Matsuyama Univ.
	The quantum laws of physics --- a new description of dynamics and causality ---	Holger F. Hofmann	Hiroshima Univ.
	Contextuality in bosonic bunching	Pawel Kurzynski [a,b], Akihito Soeda [c], Jayne Thompson [b], Dagomir Kaszlikowski [b]	a: AMU, b: NUS, c: UTokyo
	A duality relation connecting different quantum generalizations of the conditional Rényi entropy	Marco Tomamichel [a], Mario Berta [b], Masahito Hayashi [c]	a: NUS, b: ETH, c: Nagoya Univ.
17:00-17:05 [Closing]			

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13:30 –
14:50

Poster

1	Dispersion-tolerant two-photon Michelson interferometer using telecom-band photon pairs with frequency entanglement	Akio Yoshizawa, Daiji Fukuda, Hidemi Tsuchida, Noritsugu Yamamoto	AIST
2	Steering criteria for bipartite quantum entanglement --- theoretical proposal and its experimental demonstration ---	Atsushi Yabushita [a], Hsin-Pin Lo [a], Li-Yi Hsu [b]	a: NCTU, b: CYCU
3	Generation of polarization-entangled photon-pairs by cascaded SFG/SPDC using incoherent pump light	Shin Arahira, Hitoshi Murai	OKI
4	statistical mechanics formulation of prime factorization	Chihiro H Nakajima	Tohoku Univ.
5	Statistics of Error and Disturbance for Quantum Measurements	Taiki Nii, Holger F. Hofmann	Hiroshima Univ.
6	Entanglement swapping with bound entanglement	Kenta Sugiyama, Akihisa Tomita, Atsushi Okamoto	Hokkaido Univ.
7	Introduction of nonlinear dynamics to a quantum system by feedback control	Kiyotaka Nomizu, Akihisa Tomita, Atsushi Okamoto	Hokkaido Univ.
8	Non-uniform Transverse Field as an Advice to Quantum Adiabatic Computation	Jun Takahashi, Koji Hukushima	Univ. of Tokyo
9	The number-phase uncertainty relation without using a phase operator	Keisuke Watanabe, Shogo Tanimura	Nagoya Univ
10	Coupling quantum dots to a cavity-embedded nano-optical fiber	Yasuko Oe [a], Syunya Kamioka [a], Andreas Shell [b], Hideaki Takashima [a], Masazumi Fujiwara [a], Oliver Benson [b], Shigeaki Takeuchi [a]	a: Osaka Univ. b: Humboldt-Universitt
11	On-chip generation and spatial separation of quantum correlated photon pairs using Si-silica monolithic waveguide platform	Peter Karkus, Nobuyuki Matsuda, Hidetaka Nishi, Tai Tsuchizawa, William J. Munro, Hiroki Takesue, Koji Yamada	NTT
12	Realization of high-resolution quantum optical coherence tomography and demonstration of its dispersion cancellation	Yuichi Nagamatsu [a], Masayuki Okano [b], Akira Tanaka [a], Ryo Okamoto [b], Norihiko Nishizawa [c], Shigeaki Takeuchi [b]	a: Osaka Univ., b: Hokkaido Univ., c: Nagoya Univ.
13	Study on Si3N4 waveguide toward optical quantum information technology	Tatsuro Sagawa [a], Ryo Okamoto [b], Masayuki Okano [b], Masaaki Isino [c], Shiyoshi Yokoyama [c], Shigeaki Takeuchi [d]	a: Osaka Univ., b: Hokkaido Univ., c: Kyushu Univ., d: Kyoto Univ.
14	Squeezing Effect by Post-selection of Single Photon Through Weak Cross Kerr Nonlinearity	Fumiaki Matsuoka [a], Akihisa Tomita [a], Yutaka Shikano [b]	a: Hokkaido Univ., b: IMS