

QIT32 Program (May 25 Mon., 2015)

Place: Sigma Hall, Toyonaka Campus, Osaka University

Time	Title	Speaker(s)	Affiliation(s)
8:50–9:00 [Opening]			
9:00–10:20	Session I	Chair: Nobuyuki Imoto (Osaka Univ.)	
	Casimir effects in inhomogeneous media due to quantum electrodynamics	Shin-iti Goto [a], Robin W Tucker [b], Timothy J Walton [c]	a: IMS, b: Lancaster Univ., c: The Univ. of Bolton
	Laser under ultrastrong light-matter interaction -- Revival of the original electromagnetic picture --	Motoaki Bamba, Tetsuo Ogawa	Osaka Univ.
	Quantum analysis of a weak optical signal in a waveguide	Akira Kitagawa	Kochi Univ.
	Simulating the collapse of Schrodinger's cat state by wave optical experiment I	Makoto Takeuchi, Genki Ebisawa, Takahiro Kuga	The Univ. of Tokyo
10:20–10:40 Break (20 min.)			
10:40–12:20	Session II	Chair: Makoto Negoro (Osaka Univ.)	
	Tensor network studies of quantum frustrated magnets <Tutorial Lecture>	Kenji Harada	Kyoto Univ.
	Clustering by using quantum annealing	Shu Tanaka [a], Issei Sato [b], Kenichi Kurihara [c], Seiji Miyashita, Hiroshi Nakagawa [b]	a: Waseda Univ., b: The Univ. of Tokyo, c: Google
	Max Cuts in Graphs and Universal Optimization Software, and Benchmark	Hiroshi Imai, Yosuke Yano	The Univ. of Tokyo
	Spin Amplification with inhomogeneous broadening	Suguru Endo [a], Yuichiro Matsuzaki, W. J. Munro, Hiroshi Yamaguchi, Shiro Saito [b]	a: Keio Univ., b: NTT BRL
12:20–13:20 Lunch (60 min.)			
13:20–14:20 Poster Session			
14:20–16:00	Session III	Chair: Kentaro Wakui (NICT)	
	High performance single photon detection technology using superconducting nanowire <Invited Talk>	Shigehito Miki, Taro Yamashita, Hirotaka Terai	NICT
	Observation of a high visibility Hong–Ou–Mandel interference via a time-resolved coincidence measurement	Yoshiaki Tsujimoto, Yukihiro Sugiura, Motoki Tanaka, Rikizo Ikuta [a], Shigehito Miki, Taro Yamashita, Hirotaka Terai, Mikio Fujiwara [b], Takashi Yamamoto [a], Masato Koashi [c], Masahide Sasaki, Zhen Wang [b], Nobuyuki Imoto [a]	a: Osaka Univ., b: NICT, c: The Univ. of Tokyo
	Observation of frequency-domain Hong–Ou–Mandel interference by using a partial wavelength converter	Toshiki Kobayashi, Shuto Yasui, Rikizo Ikuta [a], Shigehito Miki, Taro Yamashita, Hirotaka Terai, Mikio Fujiwara [b], Takashi Yamamoto [a], Masato Koashi [c], Masahide Sasaki, Zhen Wang [b], Nobuyuki Imoto [a]	a: Osaka Univ., b: NICT, c: The Univ. of Tokyo
	Intensity fluctuation of a gain-switched semiconductor laser for a quantum key distribution system	Kensuke Nakata, Akihisa Tomita, Atsushi Okamoto	Hokkaido Univ.
16:00–16:20 Break (20 min.)			
16:20–17:40	Session IV	Chair: Akihisa Tomita (Hokkaido Univ.)	
	All-photon intercity quantum key distribution	Koji Azuma, Kiyoshi Tamaki, William J. Munro	NTT
	Measurement-device-independent quantum key distribution without decoy states	Akihiro Mizutani [a], Kiyoshi Tamaki [b], Rikizo Ikuta, Takashi Yamamoto, Nobuyuki Imoto [a]	a: Osaka Univ., b: NTT BRL
	MQ Challenge: Solving Problems for Post-Quantum Cryptography and Their Hardness Evaluation	Takanori Yasuda [a], Xavier Dahan [b], Yun-Ju Huang [a], Tsuyoshi Takagi [c], Kouichi Sakurai [a]	a: ISIT, b: Ochanomizu Univ., c: Kyushu Univ.
	Defect in Security Proof of Quantum Key Distribution based on Complementarity: Part II	Takehisa Iwakoshi	Tamagawa Univ.
17:40–18:00 Break (20 min.)			
18:00–20:00 Banquet			

QIT32 Program (May 26 Tue., 2015)

時刻	タイトル	講演者	所属
9:00–10:20 Session V			
	Chair: Masataka Iinuma (Hiroshima Univ.)		
	2-qubit Weak Measurement	Mikko Tukiainen [a,b], Hirokazu Kobayashi [c], Yutaka Shikano [b,d]	a: Univ. Turku, b: IMS, c: KUT, d: Chapman Univ.
	A weak-value interpretation of the Schwinger mechanism of massless/massive pair productions	Kazuhiro Yokota, Nobuyuki Imoto	Osaka Univ.
	Weak Value as the Conditional Expectation of a Quasi-probability Distribution	Jaeha Lee [a], Izumi Tsutsui [b]	a: The Univ. of Tokyo, b: KEK
	Evaluation of joint measurements using entanglement	Taiki Nii, Shota Kino, Holger F. Hofmann	Hiroshima Univ.
10:20–10:40 Break (20 min.)			
10:40–12:20 Session VI			
	Chair: Naoki Yamamoto (Keio Univ.)		
	Entanglement entropy and conformal field theory <Tutorial Lecture>	Shunsuke Furukawa	The Univ. of Tokyo
	On the origin of randomness in quantum mechanics	Holger F. Hofmann	Hiroshima Univ.
	On maximization of measured f-divergence between a given pair of quantum states: single-copy analysis	Keiji Matsumoto	NII
	A second-law-like converse to the data-processing inequality	Francesco Buscemi	Nagoya Univ.
12:20–13:20 Lunch (60 min.)			
13:20–15:00 Session VII			
	Chair: Takuya Hirano (Gakushuin Univ.)		
	Development of 5-mg suspended mirror driven by the quantum back-action <Invited Talk>	Nobuyuki Matsumoto	Tohoku Univ.
	Observation of optomechanical coupling in a bottle microresonator	Motoki Asano, Yuki Takeuchi [a], Sahin Kaya Ozdemir [b], Rikizo Ikuta, Takashi Yamamoto [a], Lan Yang [b], Nobuyuki Imoto [a]	a: Osaka Univ., b: Washington Univ.
	Development of a 17 GHz arbitrary waveform pulsed spectrometer for EPR quantum computation experiments at millikelvin temperatures	Yung Szen Yap [a,b], Yutaka Tabuchi [c,d], Makoto Negoro, Akinori Kagawa, Masahiro Kitagawa [a]	a: Osaka Univ., b: UTM, c: RCAST, d: The Univ. of Tokyo
	Measurement of quantum coherence of electron-phonon coupling system in GaAs using phase-locked femtosecond pulses	Kazutaka Nakamura, Shingo Hayashi, Keigo Kato, Katsura Norimatsu, Norihisa Kondo, Masaki Hada, Yosuke Kayanuma [a], Yutaka Shikao [b]	a: Tokyo Tech, b: IMS
15:00–15:20 Break (20 min.)			
15:20–17:00 Session VIII			
	Chair: Keiichi Edamatsu (Tohoku Univ.)		
	Quantum root mean square errors	Masanao Ozawa	Nagoya Univ.
	Measurement theory in local quantum physics	Kazuya Okamura, Masanao Ozawa	Nagoya Univ.
	Tradeoff Relation between Information and Disturbance in Quantum Measurement	Tomohiro Shitara [a], Yui Kuramochi [b], Masahito Ueda [a]	a: The Univ. of Tokyo, b: Kyoto Univ.
	Explicit formula for the Holevo bound for two-parameter qubit estimation problems	Jun Suzuki	UEC
	The Entropy and Probability in Information Theories -- How Dr. John von Neumann explained in his Illinois Univ. Lectures in Dec. 1949 --	Kimiaki Tokumaru	Natural Philosopher
17:00–17:10 [Closing]			

May 25 Mon.
13:20 – 14:20

Poster Session (1F, Foyer)

1	Detection–frequency dispersed pump–probe measurement of coherent optical phonons in diamond	Kazuma Ohya, Tetsuya Tsuruta, Shin-ichi Uozumi, Katsura Norimatsu, Masahiro Kitajima, Yosuke Kayanuma [a,b], Yutaka Shikano [a,c,d], Kazutaka G. Nakamura [a,b]	a: MSL, Tokyo Tech, b: JST–CREST, c: IMS, d: Chapman Univ.
2	Generalization of quantum f–divergence and its geometrical properties	Yu Takaoka, Yu Watanabe	YITP, Kyoto Univ.
3	Coherent Raman Beat Analysis of the Ramda–Type Three–Level System in an ErYSO Crystal	Kaoru Shimizu, Daisuke Hashimoto	NTT BRL
4	Simulating the collapse of Schrodinger’s cat state by wave optical experiment 2	Genki Ebisawa, Makoto Takeuchi, Takahiro Kuga	The Univ. of Tokyo
5	Toward quantum simulation of the Jaynes–Cummings–Hubbard model with many sites	Yoshihisa Kawano, Ryoto Hiji, Wataru Nishimura, Kenji Toyoda, Shinji Urabe	Osaka Univ.
6	Formulation of quantum continuous measurement using the Mensky’s restricted path integral	Satoshi Nakajima, Yasuhiro Tokura	Tsukuba Univ.
7	Development of a planar trap with permanent magnets for quantum simulation	Yuji Kawai, Kenta Matsui, Utako Tanaka, Shinji Urabe	Osaka Univ.
8	Design of a Planar Trap for Arranging Ions with Equal Spacing	Kengo Masutani, Utako Tanaka [a], Kazuhiro Hayasaka [b], Shinji Urabe [a]	a: Osaka Univ., b: NICT
9	Generation of Phase–Squeezed State using Conditional Displacement Operation and Post–Selection	Fumiaki Matsuoka, Akihisa Tomita	Hokkaido Univ.
10	Ground–state properties and dynamics of a generalized cluster model in one dimension	Takumi Ohta [a], Shu Tanaka [b], Ippei Danshita, Keisuke Totsuka [a]	a: YITP, Kyoto Univ., b: Waseda Univ.
11	Demonstration of pulsed EPR entanglement measured by shaped local oscillators	Ami Shinjo, Naoyuki Hashiyama, Yujiro Eto, Takuya Hirano	Gakushuin Univ.
12	Electrically Control of the electron and nuclear spins of a nitrogen–vacancy center in diamond	Takaaki Shimo–Oka, Satoshi Kobayashi, Yoshishige Suzuki, Norikazu Mizuochoi	Osaka Univ.
13	Adiabatic direct control of vibrational quantum states of an ion	Keisuke Suzuki, Shota Betsugi, Kenji Toyoda, Shinji Urabe	Osaka Univ.
14	Robust Quantum State Generation with a Dual–Parallel Modulator and Its Application for Quantum Key Distribution Systems	Yu Kadosawa, Kensuke Nakata, Akihisa Tomita, Atsushi Okamoto	Hokkaido Univ.
15	Phase estimation for coherent state with displaced–photon counting	Shuro Izumi, Masahiro Takeoka, Kentaro Wakui, Mikio Fujiwara [a], Kazuhiro Ema [b], Masahide Sasaki [a]	a: NICT, b: Sophia Univ.
16	Study on minimizing the temporal correlation of broadband entangled photon pairs	Shunta Sugano [a], Masayuki Okano [a,b,c], Yu Eto [b,c], Ryo Okamoto, Shigeki Takeuchi [a,b,c]	a: Kyoto Univ., b: Osaka Univ., c: Hokkaido Univ.
17	Two–photon quantum interference using a multiplexed single–photon source	Takayuki Kiyohara, Ryo Okamoto, Shigeki Takeuchi	Kyoto Univ.
18	Development of a Stripline Loop–Gap Resonator for ESR Quantum Computation Experiments	Mayuko Kuno [a], Yap Yung Szen [a,b], Negoro Makoto, Akinori Kagawa, Masahiro Kitagawa [a]	a: Osaka Univ., b: UTM
19	Formal Verification of Robertson–type Uncertainty Relation	Takaaki Masuhara, Toru Kuriyama, Masakazu Yoshida, Jun Cheng	Doshisha Univ.
20	Study on the rapid imaging of quantum optical coherence tomography	Shun Suezawa, Masayuki Okano, Ryo Okamoto [a], Norihiko Nishizawa [b], Shigeki Takeuchi [a]	a: Kyoto Univ., b: Nagoya Univ.
21	Nondemolition optical switch driven by single photon	Yasunari Suzuki, Masaki Ichida, Tsuyoshi Nagamatsu, Yuhei Iwata, Motoki Kamihigashi, Haruka Tanji–Suzuki, Masato Koashi	The Univ. of Tokyo