QIT28 Program

May 27th (Mon), 2013

Time	Title	Speaker	Affiliation
9:20- 9:30	**Opening**		
9:30- 10:50	**Session I**	**Chair Koji Azuma (NTT)**	
	Long distance entanglement between two qubits at open ends of one-dimensional quantum system under sinusoidal deformation	Toshiya Hikihara[a], Takafumi Suzuki[b]	a: Gunma Univ., b: Univ. of Hyogo
	Performance of a long distance quantum key distribution in the field environment of 90-km optical links installed in Tokyo metropolitan area	Kaoru Shimizu[a], Toshimori Honjo[a], Mikio Fujiwara[b], Toshiyuki Ito[b], Kiyoshi Tamaki[a], Shigehito Miki[b], Taro Yamashita[b], Hirotaka Terai[b],Zhen Wang[b], Masahide Sasaki[b]	a: NTT, b: NICT
	A Tool for Formal Verification of Equivalence on Quantum Cryptographic Protocols	Takahiro Kubota[a], Yoshihiko Kakutani[a], Go Kato[b], Yasuhito Kawano[b], Hideki Sakurada[b]	a: Univ. of Tokyo, b: NTT
	On misconception of Koashi's key rate theory of quantum key distribution	Osamu Hirota	Tamagawa Univ.
11:00- 12:20	**Session II**	**Chair Fumiaki Morikoshi (NTT)**	
	Improvement of Success Probability by Squeezed Light in Weak Value Amplification for Single-Photon-Level Nonlinearity	Fumiaki Matsuoka, Akihisa Tomita, Atsushi Okamoto	Hokkaido Univ.
	Weak valued statistics as fundamental explanation of quantum physics	Holger F. Hofmann	Hiroshima Univ.
	Re-interpretations for an experiment on the back-action in a weak measurement	Kouji Nakamura[a], Masataka Iinuma[b]	a: NAOJ, b: Hiroshima Univ.
	Rigorous Treatment of the Weak Measurement from the Perspective of Uncertainty and Amplification	Jaeha Lee[a], Izumi Tsutsui[b]	a: Univ. of Tokyo, b: KEK
12:20- 13:30	**Lunch**		
13:30- 15:30	**Session III**	**Chair Keiichi Edamatsu (Tohoku Univ.)**	
	Toward probing theories of gravity beyond Einstein's general relativity by using quantum interferometers **<Invited Talk>**	Hideki Asada	Hirosaki Univ.
	Gaussian Quantum Reading beyond the Standard Quantum Limit	Michele Dall'Arno	Nagoya Univ.
	Error Robustness of Spin Echo and Composite Quantum Gates	Masamitsu Bando[a], Tsubasa Ichikawa[b], Yasushi Kondo[a], Mikio Nakahara[a], Yutaka Shikano [c]	a: Kinki Univ., b: Gakushuin Univ., c: Research Center of Integrative Molecular Systems
	Anomalous diffusion in Nonlinear Quantum Walk	Yutaka Shikano[a], Tatsuaki Wada[b], Junsei Horikawa [b]	a: Research Center of Integrative Molecular Systems, b: Ibaraki Univ.
	Realization and Observation of Ultra-Broadband Frequency Correlated Photon Pairs at Near-Infrared Wavelength Range	Akira Tanaka[a], Ryo Okamoto[a], Hwan Hong Lim[b], Masayuki Okano[a], Yu Eto[a], Shanthi Subashchandran[a], Sunao Kurimura[b], Labao Zhang[c], Lin Kang[c], Jian Chen[c], Peiheng Wu[c], Toru Hirohata[d], Shigeki	a: Hokkaido Univ./Osaka Univ., b: NIMS, c: Nanjing Univ., d: Hamamatsu Photonics
15:50- 17:30	**Session IV**	**Chair Harumichi Nishimura (Nagoya Univ.)**	
	On the computational power of small-depth quantum circuits **<Invited Talk>**	Yasuhiro Takahashi	NTT
	Quantum nondemolition measurement with spin amplification	Makoto Negoro, Kenichiro Tateishi, Akinori Kagawa, Shinsuke Nishida, Yasushi Morita, Masahiro Kitagawa	Osaka Univ.
	Designing fast, high-fidelity quantum gates for superconducting qubits	Sahel Ashhab, Xin-You Lu, Franco Nori	RIKEN
	Construction of Single Error Correcting Quantum Codes for Amplitude Damping Channel Based on Classical Codes over GF(7)	Keisuke Kodaira, Mihoko Wada, Tomoharu Shibuya	Sophia Univ.
18:30- 20:30	**Banquet**		

QIT28 Program

May 28th (Tue), 2013

Time	Title	Speaker	Affiliation
9:20- 10:40	**Session V**	**Chair Tomohiro Ogawa (Univ. of Electro-Communications)**	
	QFT Algorithm on Symmetric Groups	Yasuhito Kawano[a], Hiroshi Sekigawa[b]	a: NTT, b: Tokyo Univ. of Science
	Quantum Algorithms for Matrix Products over Semirings	Francois Le Gall[a], Harumichi Nishimura[b]	a: Univ. of Tokyo, b: Nagoya Univ.
	Probing an untouchable environment as a resource for quantum computing	Masaki Owari[a], Koji Maruyama[b], Takeji Takui[b], Go Kato[a]	a: NTT, b: Osaka City Univ.
	Measurement-Based Quantum Computation on Symmetry Breaking Thermal States	Keisuke Fujii[a], Yoshifumi Nakata[b], Masayuki Ohzeki[a], Mio Murao[c]	a: Kyoto Univ., b: Univ. of Hannover, c: Univ. of Tokyo
10:50- 11:50	**Session VI**	**Chair Takashi Yamamoto (Osaka Univ.)**	
	Semiconductor Photon Source of Single Photons and Entangled Photon Pairs for Quantum Information and Communication <Invited Talk>	Ikuo Suemune, Hidekazu Kunamo, Hideaki Nakajima, Xiangming Liu, Hirotaka Sasakura, Satoru Odashima	Hokkaido Univ.
	Quantum error correction with orbital angular momentum of single photons	Jun Suzuki	UEC
11:50- 13:00	**Lunch**		
13:00- 14:30	**Poster Session**		
14:30- 16:10	**Session VII**	**Chair Naoki Yamamoto (Keio Univ.)**	
	Continuous Variable Entropic Uncertainty Relations with Quantum Side Information and Application to QKD	Fabian Furrer[a], Mario Berta[b], Volkher B. Scholz[b], Matthias Christandl[b], Marco Tomamichel[c]	a: Univ. of Tokyo, b: ETH, c: NUS
	Does "quantum nonlocality without entanglement" have quantum origin?	Masato Koashi[a], Koji Azuma[b], Shinya Nakamura[c], Nobuyuki Imoto[c]	a: Univ. of Tokyo, b: NTT BRL, c: Osaka Univ.
	Spin network theory and entanglement	Fumiaki Morikoshi	NTT
	Generalized monogamy of contextual inequalities from the no-disturbance principle	Ravishankar Ramanathan, Akihito Soeda, Pawel Kurzynski, Dagomir Kaszlikowski	CQT, NUS
	The equivalence between information and entanglement from a thermodynamical viewpoint	Hiroyasu Tajima	Univ. of Tokyo
16:10- 16:20	**Closing**		

May 28th(Tue) 13:00- 14:30	Poster		
1	Quasi-Magnon Dynamics on Hybrid Superconducting Qubit and Nitrogen Vacancy Centers in Diamond	Ali Ü. C. Hardal[a], Peng Xue[b], Yutaka Shikano[c], Özgür E. Müstecaplioglu[a], Barry C. Sanders[d]	a: Koc Univ. , b: Southeast Univ., c: Research Center of Integrative Molecular Systems, d: Univ. of Calgary
2	Generation of WDM polarization-entangled photon pairs by cascaded SFG/SPDC method in a 1.5-um wavelength band	Shin Arahira, Hitoshi Murai	OKI
3	Investigations of population relaxation properties of hyperfine sublevels in 167Er3+ ions doped in an Y2SiO5 crystal	Daisuke Hashimoto, Kaoru Shimizu	NTT
4	Telecom-band two-photon Michelson interferometer using collinear photon pairs with frequency entanglement	Akio Yoshizawa, Daiji Fukuda, Hidemi Tsuchida	AIST
5	Single photon buffer based on coupled resonator optidal waveguide	Hiroki Takesue, Nobuyuki Matsuda, Eiichi Kuramochi, Masaya Notomi	NTT
6	Estimation of quantum network via continuous measurement on single node	Yuzuru Kato, Naoki Yamamoto	Keio Univ.
7	Observation of non-classical interference using two photon pairs at visible and telecom wavelengths	Yoshiaki Tsujimoto, Daisuke Katsuse, Makoto Ando, Rikizo Ikuta, Takashi Yamamoto[a], Masato Koashi[b], Nobuyuki Imoto[a]	a:Osaka Univ. , b: Univ. of Tokyo
8	Observation of converted and unconverted lights preserving phase information via difference frequency generation by using weak coherent light pulse	Toshiki Kobayashi, Rikizo Ikuta, Hiroshi Kato[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: Univ. of Tokyo
9	Two-photon fluorescence from a metal nanostructure coupled with a fiber-microsphere	Hideaki Takashima, Fang Ren, Yoshito Tanaka, Hideki Fujiwara, Keiji Sasaki	Hokkaido Univ.
10	Quantum Superposition of Crystalline structure in Linear Paul Trap	Atsushi Noguchi, Kenji Toyoda, Shinji Urabe	Osaka Univ.
11	Quantum properties of a coherent single-photon frequency comb	Changliang Ren, Holger F. Hofmann	Hiroshima Univ.
12	Geometry of Grover's search algorithms	Ken Hamada, Shuhei Tamate, Kazuhisa Ogawa, Masao Kitano	Kyoto Univ.
13	Inter-band fluctuations in macroscopic quantum tunneling with two-band superconductors	Yukihiro Ota, Franco Nori[a], Hidehiro Asai, Shiro Kawabata[b]	a: RIKEN, b: AIST
14	Entanglement Properties in VBS State in Two Dimension	Shu Tanaka[a], Jie Lou[b], Hosho Katsura[c], Naoki Kawashima[a]	a: Univ. of Tokyo, b: Fudan Univ., c: Gakushuin Univ.
15	Robust Quantum LQG Control of the Optomechanical Sensors for the phase uncertainty of the input field	Sanae Iida, Naoki Yamamoto	Keio Univ.
16	A ferro-spin filter for photonic polarization qubits	Rikizo Ikuta[a], Sahin K. Ozdemir[b], Mark Tame[c], Toshiyuki Tashima[d], Yoritoshi Adachi, Takashi Yamamoto[a], Masato Koashi[e], Nobuyuki Imoto[a]	a: Osaka Univ., b: Washington Univ., c: ICL, d: LUM/MPL, e: Univ. of Tokyo
17	The effect of diamond nanocrystal structures to the coupling of single nitrogen vacancy centers with tapered nanofibers	M. Almokhtar, M. Fujiwara, S. Takeuchi	Hokkaido Univ.
18	Entanglement Properties of Quantum Hard-core Particle Systems on ladders	Ryo Tamura[a], Shu Tanaka[b], Hosho Katsura[c]	a: NIMS, b: Univ. of Tokyo, c: Gakushuin Univ.
19	Quantum information processing experiment in nuclear spin system hyperpolarized with dynamic nuclear polarization using photoexcited triplet electrons	Shun Hashizaki[a], Kenichiro Tateishi[b], Makoto Negoro, Shinsuke Nishida, Akinori Kagawa, Yasushi Morita, Masahiro Kitagawa[a]	a: Osaka Univ., b: RIKEN
20	Mean- eld analysis of nuclear magnetic phase transition in a p-terphenyl crystal	Takahiro Kitano, Akinori Kagawa, Makoto Negoro[a], Isao Maruyama[b], Masahiro Kitagawa[a]	a: Osaka Univ., b: Fukuoka Institute of Technology
21	Instrumentation Development of ESR Quantum Computation	Yuki HASHIMOTO, Yang Szen Yap[a], Yutaka Tabuchi[b], Tatsunori Kato, Hiroshi Yamamoto, Makoto Negoro, Akinori Kagawa, Katsuhiro Kitagawa[a]	a: Osaka Univ., b: Univ. of Tokyo
22	Complex Probability and Weak Value From the Viewpoint of Operational Probabilistic Theory	Kazuki FUKUDA	SOKENDAI
23	Photon Anti-Bunching in Mach-Zehnder Interferometer with NOON state	Kenji Tsujino, Toshio Yamaguchi, Midori Matsumoto, Junji Kinoshita	Tokyo Women's Medical Univ.