November 18, Monday

9th NTT-BRL School

9:50 - 10:00	**Opening**

10:00 - 11:00 Lecture 1

Theory of Superconducting Qubits Coupled to Surface Acoustic Waves - I

Prof. Göran Johansson

Chalmers University of Technology

11:00 - 11:30	**Coffee Break**

11:30 - 12:30 Lecture 2

Theory of Superconducting Qubits Coupled to Surface Acoustic Waves - II

Prof. Göran Johansson

Chalmers University of Technology

12:30 - 12:40	**School Photo**

12:40 - 13:30	**Lunch Time**

13:30 - 14:30 Lecture 3

Experiment with Superconducting Qubits Coupled to Surface Acoustic Waves - I

Prof. Per Delsing

Chalmers University of Technology

14:30 - 15:00	**Coffee Break**

15:00 - 16:00 Lecture 4

Experiment with Superconducting Qubits Coupled to Surface Acoustic Waves - II

Prof. Per Delsing

Chalmers University of Technology

16:00 - 18:00	**Student Lab. Tour**

19:30 - 21:30	**Student Welcome Party (with the lecturers)**

November 19, Tuesday

10:00 - 11:00	**Lecture 5**

Cavity Quantum Electrodynamics beyond Strong Coupling - I

Dr. Kouichi Semba

NICT

11:00 - 11:30	**Coffee Break**

11:30 - 12:30	**Lecture 6**

Cavity Quantum Electrodynamics beyond Strong Coupling - II

Dr. Kouichi Semba

NICT

12:30 - 14:00	**Lunch Time**

November 19, Tuesday

ISNTT2019 Symposium

14:00 - 14:20	**Opening Remarks**

Session 1 : Opening Keynote

14:20 - 15:20

Tu-01 : **Nanoscale Transport and our New International System of Units**

(Keynote) K. von Klitzing

Max Planck Institute

15:20 - 15:40	**ISNTT2019 Symposium Photo**

15:40 - 16:10	**Coffee Break**

Session 2 : Novel Superconducting Systems

16:10 - 16:40

Tu-03 : **Nonlinear Optics in the Ultra-strong Coupling Regime of Cavity Quantum Electrodynamics**

(Invited) F. Nori

RIKEN / University of Michigan

16:40 - 17:00

Tu-04 : **π-phase-shift Flux Qubit with a Ferromagnetic Josephson Junction**

T. Yamashita, K. Zuo, Y. Urade, Q. Wei, H. Terai, A. Fujimaki, Y. Nakamura

Nagoya University / JST PRESTO

17:00 - 17:20

Tu-05 : **NbN-based Superconducting Qubit on Si Substrate**

S. Kim, T. Fuse, F. Yoshihara, W. Qiu, T. Yamashita, Z. Ao, K. Semba, H. Terai

National Institute of Information and Communications Technology

17:20 - 17:40	**Coffee Break**

17:40 - 19:30	Poster Session I

November 20, Wednesday

Session 3 : Quantum Hall and Quantum Anomalous Hall Systems

9:00 - 9:30

We-01 : **Aharonov-Bohm Interference of Fractional Quantum Hall Edge Modes**

(Invited) J. Nakamura

Purdue University

9:30 - 9:50

We-02 : **Charge Equilibration Between Counter-propagating Edge Channels at a Fractional-integer Quantum Hall Junction**

M. Hashisaka, T. Akiho, S. Sasaki, K. Muraki

NTT Basic Research Laboratories / JST PRESTO

9:50 - 10:10

We-03 : **Unusual Filling Factor Dependence of Stripe Phase Anisotropy**

M. A. Zudov, X. Fu, Q. Shi, G. C. Gardner, J. D. Watson, M. J. Manfra, K. W. Baldwin, L. N. Pfeiffer, K. W. West

University of Minnesota

10:10 - 10:30

We-04 : **Metal-insulator Transition in Magnetic Topological Insulator Driven by Magnetization Angle Rotation**

M. Kawamura, M. Mogi, R. Yoshimi, A. Tsukazaki, Y. Kozuka, K. S. Takahashi, M. Kawasaki, Y. Tokura

RIKEN

10:30 - 11:00	**Coffee Break**

Session 4 : Semiconductor Quantum Dots and Qubits

11:00 - 11:30

We-05 : **Quantum Horizon for Silicon Nanoelectronics**

(Invited) S. De Franceschi

CEA-INAC

11:30 - 12:00

We-06 : **Solitary Electrons in Semiconductor Circuits**

(Invited) V. Kashcheyevs

University of Latvia

12:00 - 12:20

We-07 : **Effective Time-resolved Detection of Picosecond Coherent Dynamics in a Si Dynamic Quantum Dot**

G. Yamahata, S. Ryu, N. Johnson, H.-S. Sim, A. Fujiwara, M. Kataoka

NTT Basic Research Laboratories

12:20 - 12:40

We-08 : **Silicon Quantum Processor Unit Cell Operation Above One Kelvin**

R. C. C. Leon, C. H. Yang, J. C. C. Hwang, J. C. Lemyre, T. Tanttu, W. Huang, K. W. Chan, K. Y. Tan, F. E. Hudson, K. M. Itoh, A. Morello, A. Laucht, M. Pioro-Ladriére, A. Saraiva, A. S. Dzurak

UNSW Sydney

12:40 - 13:00

We-09 : **Electrical Read-out of Magnetization Reversal Using Kondo Correlation in Hybrid Mesoscopic Quantum Dots**

S. Datta, I. Weymann, L. Marty, W. Wernsdorfer

Indian Association for the Cultivation of Science /

Institut Néel, CNRS & Université Joseph Fourier

13:00 - 14:00	**Lunch Time**

Session 5 : New Insights into Transport Phenomena

14:00 - 14:30

We-10 : **Imaging of Work and Dissipation in the Quantum Hall State in Graphene**

(Invited) E. Zeldov

Weizmann Institute of Science

14:30 - 15:00

We-11 : **Imaging Interacting Electrons – From Wigner Crystals to Electron Hydrodynamics**

(Invited) S. Ilani

Weizmann Institute of Science

15:00 - 15:30

We-12 : **Imaging Hot-electron Distribution in Nanoscale Electronic Devices**

(Invited) Q. Weng, Z. An, W. Lu, S. Komiyama

RIKEN

15:30 - 16:10	**Coffee Break**

Session 6 : Thermodynamics and Fluctuations in Nano Systems

16:10 - 16:40

We-14 : **Photothermoelectric Energy Conversion in Nanowires**

(Invited) H. Linke

Lund University

16:40 - 17:00

We-15 : **Observation of Cooling in a Dynamic Quantum Dot**

N. Johnson, G. Yamahata, A. Fujiwara

NTT Basic Research Laboratories

17:00 - 17:20

We-16 : **A Single Spin-1/2 as a "Heat Engine" Exhibiting Quantum Interferometry**

S. N. Shevchenko, K. Ono, T. Mori, S. Moriyama, F. Nori

B. Verkin Institute for Low Temperature Physics and Engineering /

V. N. Karazin Kharkov National University / RIKEN

17:20 - 17:40

We-17 : **A Random Walk Benchmark for Deterministic Electron Transfer**

N. Ubbelohde, D. Reifert, M. Kokainis, A. Ambainis, V. Kashcheyevs

Physikalisch-Technische Bundesanstalt

17:40 - 19:30 Poster Session II

November 21, Thursday

Session 7 : Hybrid Quantum Systems

9:00 - 9:30

Th-01 : **Electron Spin Resonance (ESR) with Superconducting Circuits**

(Invited) D. Vion

CEA Saclay

9:30 - 9:50

Th-02 : **Electron Spin Resonance Spectroscopy with 20 Spins/$\sqrt{}$Hz Sensitivity Using a Superconducting Flux Qubit**

R. P. Budoyo, K. Kakuyanagi, H. Toida, Y. Matsuzaki, S. Saito

NTT Basic Research Laboratories

9:50 - 10:10

Th-03 : **Quantum Sensing of Magnons with a Superconducting Qubit**

S. P. Wolski, D. Lachance-Quirion, Y. Tabuchi, S. Kono, K. Usami, Y. Nakamura

The University of Tokyo

10:10 - 10:30

Th-04 : **Statistics of Coherent States in Wave Mixing on a Two-level System**

A. Yu. Dmitriev, R. Shaikhaidarov, T. Hönigl-Decrinis, S. E. de Graaf,

V. N. Antonov, O. V. Astafiev

Skolkovo Institute of Science and Technology /

University of London

10:30 - 11:00 **Coffee Break**

Session 8 : Opto / Nano-mechanics

11:00 - 11:30

Th-05 : **What limits the Coherence of (Quantum) Nanomechanical Devices?**

(Invited) I. Favero

CNRS

11:30 - 12:00

Th-06 : **Ultralow Dissipation Phononics and Phononics Sensing**

(Invited) E. Romero

The University of Queensland

12:00 - 12:20

Th-07 : **There is a Crack in Everything, That's How the Light Gets in: Nano-optomechanical Systems for Sensing**

W. K. Hiebert, S. K. Roy, J. N. Westwood-Bachman, M. P. Maksymowych, T. Firdous, M. Belov, N. Elhamel, A. Venkatasubramanian, V. T. K. Sauer

National Research Council of Canada / University of Alberta

12:20 - 12:40

Th-08 : **Nonlinear Measurement - feedback Thermomechanical Squeezing with Schwinger Angular Momentum**

M. Asano, T. Aihara, T. Tsuchizawa, H. Yamaguchi

NTT Basic Research Laboratories

12:40 - 13:00

Th-09 : **Photon and Phonon Blockade in Coupled Optomechanical Systems**

B. Sarma

OIST Graduate University

13:00 - 14:00 **Lunch Time**

Session 9 : Quantum and Nonlinear Optics

14:00 - 14:30

Th-10 : (Invited) **Microwave to Optical Conversion Using Rare Earth Ions in the Solid State**

J. J. Longdell

University of Otago

14:30 - 14:50

Th-11 : **Optical Coherent Transient of $^{167}Er^{3+}$ in Y_2SiO_5 at Telecom-band Wavelength**

M. Hiraishi, M. IJspeert, T. Tawara, S. Adachi, R. Kaji, H. Omi, H. Gotoh

NTT Basic Research Laboratories / Tokyo University of Science

14:50 - 15:10

Th-12 : **Efficient Femtojoule-level Nonlinear Optics in Nanophotonic PPLN Ridge Waveguides**

M. Jankowski, C. Langrock, B. Desiatov, A. Marandi, C. Wang, M. Zhang, C. R. Phillips, M. Loncar, M. M. Fejer

Stanford University / NTT PHI Labs

15:10 - 15:40

Th-13 : (Invited) **Non-classical Light from Quantum Dots in Photonic Nanowires**

D. Dalacu

National Research Council of Canada

15:40 - 16:10	**Coffee Break**

Session 10 : Fascinating Physics / Optics from Functional Materials

16:10 - 16:40

Th-14 : **III-V Semiconductor Nanostructures for Optoelectronic Device and Energy Applications**

(Invited) H. Hoe Tan

The Australian National University

16:40 - 17:00

Th-15 : **Spin-orbit Coupling Effect in ZnO Heterostructures**

D. Maryenko, M. Kawamura, M. Kriener, M. S. Bahramy, Y. Kozuka, M. Kawasaki

RIKEN

17:00 - 17:20

Th-16 : **Efficient Direct Bandgap Emission from Hexagonal SiGe**

E. M. T. Fadaly, A. Dijkstra, M. Van Tilburg, C. Mao, M. Verheijen, J. Haverkort, E. P. A. M. Bakkers

TU Eindhoven

17:20 - 18:00	**Bus Transfer**

18:00 - 20:00	**Banquet**

November 22, Friday

Session 11 : Topological Systems and Spin-orbit Interactions

9:00 - 9:30

Fr-01 : **Imaging 2D Topological Systems by Microwave Impedance Microscopy**

(Invited) Y. Cui

University of California, Riverside

9:30 - 9:50

Fr-02 : **Impact of Spin-orbit Interaction on the Topological Phase Transition in InAs/GaSb Composite Quantum Wells**

H. Irie, T. Akiho, K. Onomitsu, K. Muraki

NTT Basic Research Laboratories

9:50 - 10:10

Fr-03 : **Implementation of an Inhomogeneous Large Spin-orbit Interaction at the Nanoscale**

M. R. Delbecq, L. C. Contamin, T. Cubaynes, V. Vinel, M. M. Desjardins, M. C. Dartialh, S. Rohart, A. Thiaville, Z. Legthas, A. Cottet, T. Kontos

ENS / CNRS / Sorbonne Université / Université Paris-Diderot

10:10 - 10:30

Fr-04 : **Exploring Quantum Hybrid System with a Hole Nanowire**

R. Wang, R. S. Deacon, J. Sun, J. Yao, C. M. Lieber, K. Ishibashi

Tokyo University of Science

10:30 - 11:00 **Coffee Break**

Session 12 : Novel Functions from Low-dimensional Materials

11:00 - 11:30

Fr-05 : **Physics and Technology of Graphene-based 2D Heterostructures for Current-injection Terahertz Lasers and Amplifiers**

(Invited) T. Otsuji

Tohoku University

11:30 - 12:00

Fr-06 : **Terahertz Spectroscopy of Electron-vibron Coupling in Single Molecules by Using Nanogap Electrodes**

(Invited) K. Hirakawa

The University of Tokyo

12:00 - 12:20

Fr-07： **Manipulating Continuous Transition Between Strong Coupling and Weak Coupling in TMD Monolayer Coupled with Plasmonic Nanocavities**

S. Hou, L. Y. M. Tobing, X. Wang, Z. Xie, J. Yu, J. Zhou, D. Zhang, C. Dang, P. Coquet, B. K. Tay, M. D. Birowosuto, E. H. T. Teo, H. Wang

Nanyang Technological University

12:20 - 12:40

Fr-08： **Creation of Spin Singlet and Triplet Excitons in a Single Molecule**

K. Kimura, K. Miwa, H. Imada, M. Imai-Imada, Y. Kim

RIKEN / JST PRESTO

12:40 - 13:00

Fr-09： **Plasmonic Response in Graphene with Transparent Patterned Gate**

N.-H. Tu, K. Yoshioka, S. Sasaki, M. Takamura, K. Muraki, N. Kumada

NTT Basic Research Laboratories

13:00 - 14:00 **Lunch Time**

Session 13：Superconducting Quantum Circuits

14:00 - 14:30

Fr-10： **Few-photon Parametric Oscillators and Dynamics**

(Invited) A. Safavi-Naeini

Stanford University

14:30 - 15:00

Fr-11： **Error-corrected Operations on an Encoded Qubit**

(Invited) S. Rosenblum

Weizmann Institute of Science

15:00 - 16:00

Fr-12： **Superconducting Circuits for Quantum Technologies**

(Keynote) Y. Nakamura

The University of Tokyo / RIKEN

16:00 - 16:10 **Closing**

16:10 - 16:40 【BRL School】**Closing**

Poster Session I (November 19, Tuesday)

PTu01 : Optical absorption and Emission of Erbium Ions in Integrated Optical Waveguides

X. Xu, V. Fili, T. Inaba, T. Tawara, H. Omi, H. Gotoh

NTT Basic Research Laboratories

PTu02 : Improvement of the Crystallinity of Gd_2O_3 on Si by an Interface Control

T. Inaba, X. Xu, T. Tawara, H. Omi, H. Yamamoto, H. Gotoh

NTT Basic Research Laboratories

PTu03 : A Novel Fiber-to-superconducting Single Photon Detector Coupling Mechanism and Recent Progress on NbTiN SSPDs

J. R. Flaschmann, F. Flassig, S. Strohauer, T. Kainz, L. Zugliani, K. Müller, R. Gross, M. Althammer, J. J. Finley

Walter Schottky Institute, Technische Universität München

PTu04 : Towards an Improved Ultrafast Electron Source for Dielectric Laser Acceleration

L. Brückner, N. Schönenberger, P. Hommelhoff

Friedrich-Alexander-Universität Erlangen-Nürnberg

PTu05 : Actively Stabilized XUV Interferometer with Attosecond Time Resolution

K. Asaga, H. Mashiko, Y. Chisuga, A. Oshima, T. Nishikawa, I. Katayama, J. Takeda, H. Gotoh, K. Oguri

NTT Basic Research Laboratories / Tokyo Denki University

PTu06 : Interactions Between Light and Gunn Domains in GaAs

H.-W. Hsu, V. Sih

University of Michigan

PTu07 : Dispersion Adjustment of Electro-optic-modulation Comb

K. Hitomi, A. Ishizawa, K. Hitachi, T. Akatsuka, T. Nishikawa, H. Gotoh

NTT Basic Research Laboratories / Tokyo Denki University

PTu08 : Supercontinuum Generation in Silicon-nitride Waveguides Pumped at Telecommunications Wavelengths

S. Crepaldi, A. Ishizawa, R. Kou, T. Aihara, T. Tsuchizawa, N. Yamamoto, K. Hitachi, K. Yamada, H. Gotoh

NTT Basic Research Laboratories

PTu09 : Nanoparticle Trapping Using Nano-structured Plasmonic Devices

T. D. Bouloumis, X. Han, D. Kotsifaki, V. G. Truong, S. N. Chormaic

Okinawa Institute of Science and Technology

PTu10 : Graphene-loaded Photonic Crystals for Optical Switching Based on Coherent Perfect Absorption

S. Sasaki, H. Chiba, M. Ono, M. Notomi

Tokyo Institute of Technology / NTT Basic Research Laboratories

PTu11 : Photonic Topological Phase Transition in Photonic Crystals Loaded with Phase-change Materials

T. Uemura, H. Chiba, T. Yoda, Y. Moritake, Y. Tanaka, M. Notomi

Tokyo Institute of Technology / NTT Basic Research Laboratories

PTu12 : Quantum Well Infrared Detectors Operating in the Strong Light-matter Coupling Regime

N.-L. Tran, P.-B. Vigneron, S. Pirotta, I. Carusotto, G. Biasiol, J.-M. Manceau, A. Bousseksou, R. Colombelli

Center for Nanosience and Nanotechnology (C2N), Université Paris Saclay

PTu13 : Classifying Quantum States Using Neural Networks

D. Craig, G. Tribello, A. Ferraro

University of Oxford

PTu14 : Frequency-multiplexed Polarization-entangled Photon Pairs Generated by Cavity-enhanced Spontaneous Parametric Down-conversion

T. Yamazaki, R. Ikuta, T. Kobayashi, S. Miki, M. Yabuno, H. Terai, N. Imoto, T. Yamamoto

Osaka University

PTu15 : Disorder-induced Dephasing in Topologically Protected Photon Transport

C. Gneiting, F. Nori

RIKEN

PTu16 : Phonon Laser with Trapped Ions

C.-Y. Lee, K.-T. Lin, G.-D. Lin

National Taiwan University

PTu17 : Enhancement of Opto-mechanical Coupling in a Superconducting Hybrid System

T. Bera, S. Majumder, V. Singh

Indian Institute of Science

PTu18 : Micromechanical Control of Exciton Lifetime

R. Ohta, H. Okamoto, T. Tawara, H. Gotoh, H. Yamaguchi

NTT Basic Research Laboratories

PTu19 : Propagation and Confinement of Acoustic Phonons in InGaAsP Multiple Quantum wells

S. Aragaki, K. Hitachi, A. Ishizawa, T. Nishikawa, H. Gotoh, K. Oguri

NTT Basic Research Laboratories / Tokyo Denki University

PTu20 : Coupled Mechanical Resonators Behave Similar to Qubits

O. V. Ivakhnenko, S. N. Shevchenko, F. Nori

B. Verkin Institute for Low Temperature Physics and Engineering / RIKEN

PTu21 : Towards Homoclinic Bifurcations in Nonlinear MEMS Devices

S. Houri, D. Hatanaka, M. Asano, H. Yamaguchi

NTT Basic Research Laboratories

PTu22 : Full Analytical Consideration of Acoustic Phonon Scatterings in Two-dimensional Dirac Materials

K. V. Nguyen, Y.-C. Chang

Academia Sinca / National Central University

PTu23 : Signatures of Topologically Protected Electronic States in S-Bi-S Junctions

A. Bernard, A. Murani, A. Kasumov, B. Dassonneville, R. Deblock, M. Ferrier, A. Chepelianskii, R.S. Deacon, H. Bouchiat, S. Guéron

Laboratoire de Physique des Solides

PTu24 : Lateral Superlattice in GaAs: How to make "Anti-graphene"

D. Q. Wang, O. P. Sushkov, A. D. Wieck, A. R. Hamilton, O. Klochan

University of New South Wales

PTu25 : Raman Fingerprint of Magnetic Transition in Layered Materials

A. Ghosh, M. Palit, S. Datta

Indian Association for the Cultivation of Science

PTu26 : Exciton Binding Energies of Monolayer WSe_2 with Different Surrounding Materials

J. Escolar, N. Peimyoo, H.-Y. Wu, F. Vollmer, S. Russo, M. Craciun

University of Exeter

PTu27 : Improving Superconducting Quantum Technologies with Van der Waals Materials

Q. Li, J. I -J. Wang, M. Yamoh, D. Rodan-Legrain, D. Bandurin, C. Bøttcher, D. Kim, J. L. Yoder, K. Watanabe, T. Taniguchi, T. P. Orlando, S. Gustavsson, P. Jarillo-Herrero, W. D. Oliver

Massachusetts Institute of Technology

PTu28 : Fine-structure Constant in Graphite

K. Sasaki, K. Hitachi

NTT Research Center for Theoretical Quantum Physics / NTT Basic Research Laboratories

PTu29 : Reliable, Scalable, and Tunable Nanogap Formation by Edge-trimming of Graphene

Ng. H. Thai, M. Hofmann

National Cheng Kung University

PTu30 : Electron Transport Behavior in Two-dimensional MoS_2 Field Effect Transistors

Y.-L. Zhong, J.-H. Chen, Y.-W. Lan, L.-J. Li, C.-D. Chen

Chung Yuan Christian University

PTu31 : Electron Transmission through Zn Metal Contacts in Graphene

I. Leontis, A. Bacon, M. Craciun, S. Russo

University of Exeter

PTu32 : Electron Beam / Focused Ion Beam-assisted Deposition of Metal Electrodes on Transition Metal Dichalcogenides

I. Honda, S. Ono, I. Shioya, Y. Shimazu

Yokohama National University

PTu33 : Fluctuation Theorems for an Arbitrary CPTP Map

S. Kamimura, Y. Tokura, K. Yoshida

University of Tsukuba

PTu34 : Engineering Quantum Dynamics with Periodic Driving and Deep Reinforcement Learning

T. Haug, L.-C. Kwek, W. J. Munro, K. Nemoto, V. M. Bastidas

Centre for Quantum Technologies

PTu35 : Thermodynamically Consistent Description of a Nonequlibrium Quantum Critical System: Heat Transfer Statistics in the Open Lipkin-Meshkov-Glick Model

C. W. Wächtler, G. Schaller

Technical University Berlin

PTu36 : Ultrafast Hot Carrier Relaxation Dynamics in 2D Materials

S. Borah, D. Yadav, F. Pauly

Okinawa Institute of Science and Technology

PTu37 : High-frequency Techniques for Joule Heating and Drift-velocity Saturation Measurements in Two-dimensional Materials

A. C. Bacon, A. De Sanctis, S. Russo

University of Exeter

PTu38 : Relaxation in the Interacting Edge Channels

S. Ozawa, K. Yoshida, Y. Tokura

University of Tsukuba

PTu39 : Hong Ou Mandel Correlation in the Quantum Hall Regime

I. Taktak, M. Kapfer, P. Roulleau, D. C. Glattli

CEA Saclay

PTu40 : Fractional Quantum Hall Effects under In-situ Controlled Disorder Screening

T. Akiho, K. Muraki

NTT Basic Research Laboratories

PTu41 : Two- and Three-electron Bubbles in the *N* = 3 Landau Level

M. A. Zudov, X. Fu, Q. Shi, G. C. Gardner, J. D. Watson, M. J. Manfra

Unievrsity of Minnesota

PTu42 : Charge Mobility Characterization of Light Irradiated Ge/SiGe Heterostructures

G. G. Maia, K. Sawano, A. Oiwa

Osaka University

PTu43 : Requirements for Stable Atomic-Scale Nanostructures toward Large-Scale Integration at Semiconductor Surfaces

K. Kanisawa

NTT Basic Research Laboratories

PTu44 : Unconventional Hole State Manipulation with Textured Spin in Quantum Dots

A. Lin, M. F. Doty, G. W. Bryant

University of Maryland and NIST

PTu45 : Fast Tuning of Quantum Dots Using FPGAs

N. Messaoudi, A. Badaroudine, L. Njejimana, G. Heintz, M.-A. Genest, M.-A. Roux, M. Pioro-Ladrière

University of Sherbrooke

PTu46 : Probing the Singlet-triplet Splitting in Double Quantum Dots with ac Fields

G. Giavaras, Y. Tokura

University of Tsukuba

PTu47 : Correlated Disorder Potential Effect on the Conductance through Quantum Point Contacts

T. Aono, M. Takahashi, M. H. Fauzi, Y.Hirayama

Ibaraki University

PTu48 : Trapping and Counting Ballistic Non-equilibrium Electrons

L. Freise, T. Gerster, D. Reifert, T. Weimann, K. Pierz, F. Hohls, N. Ubbelohde

Physikalisch-Technische Bundesanstalt

PTu49 : Parity-dependent Shot Noise in a Nanowire Quantum Dot: a Role of Spin-flip Process

K. Takase, Y. Utsumi, Y. Ashikawa, G. Zhang, K. Tateno, Y. Okazaki, S. Sasaki

NTT Basic Research Laboratories

PTu50 : 28nm UTBB FD-SOI Technology for Silicon-based Quantum Dots and Cryo-CMOS Electronics

I. Kriekouki, M. Pioro-Ladrière, M. Barragan, S. Mir, S. Rochette, C. Rohrbacher, J. Camirand Lemyre, D. Drouin, P. Galy

Université de Sherbrooke / Université Grenoble Alpes, CNRS, Grenoble INP / STMicroelectronics

PTu51 : Dynamical Control and Precise Measurement in Condensed-Phase Molecular Systems

N. T. Phuc

Institute for Molecular Science

PTu52 : Q-Biol: A Quantum Bioelectrochemical Software Based on Single-electron Counting

C. Gerbelot, I. Madrid, F. Cleri, T. Yamaguchi, H. Tanaka, C. Demaille, T. Fujii, A. Fujiwara, N. Clement

NTT Basic Research Laboratories / The University of Tokyo

PTu53 : Full Counting Statistics of Single-electron Transport in Redox-labeled DNA Motors

I. Madrid, C. Gerbelot, T. Yamaguchi, T. Fujii, A. Fujiwara, N. Clement

The University of Tokyo

Poster Session II (November 20, Wednesday)

PWe01 : Optimal Control on Superconducting Xmon Qubits

Y.-C. Liao

National Taiwan University

PWe02 : Quantum Critical Phenomena in Microwave Scattering Off a Two-state System in Superconducting Circuits

T. Yamamoto, T. Kato

The University of Tokyo

PWe03 : Fast Amplification and Rephasing of a Cat State in a Qubit-Oscillator System

T. Fuse, Z. Xiao, S. Ashhab, F. Yoshihara, K. Semba, M. Sasaki, M. Takeoka, J. P. Dowling

NICT

PWe04 : Derivation of the Hamiltonian of a Flux Qubit-LC Oscillator Circuit Using the Circuit Variables

F. Yoshihara, S. Ashhab, T. Fuse, K. Semba

NICT

PWe05 : Coherence Times of a Capacitively Shunted Superconducting Flux Qubit Embedded in a 3D Cavity

L. V. Abdurakhimov, I. Mahboob, H. Toida, K. Kakuyanagi, S. Saito

NTT Basic Research Laboratories

PWe06 : A Quantum Limited Josephson Parametric Amplifier in a 3D Microwave Cavity

I. Mahboob, H. Toida, K. Kakuyanagi, Y. Nakamura, S. Saito

NTT Basic Research Laboratories

PWe07 : Versatile Vacuum Gap Crossovers (VGCs) for Use in a Compact Quantum Integrated Circuit

R. Wang, Y. Nakajima, D. Zhang, S. Kwon, J. Zotova, H. Mukai, Y. Zhou, M. Hidaka, J.-S. Tsai

Tokyo University of Science

PWe08 : In-plane Selective Area InSb-Al Nanowire Quantum Networks

R. L.M. Op het Veld, D. Xu, V. Schaller, M. A. Verheijen, J. Jung, J. S. Lee, M. Pendharkar, S. Koelling, L. P. Kouwenhoven, C. J. Palmstrom, H. Zhang, E. P.A.M. Bakkers

Eindhoven University of Technology / Delft Univ. of Technology

PWe09 : Selective Area Semiconductor-superconductor Networks

J. Jung, R. L.M. Op het Veld, D. Xu, V. Schaller, M. A. Verheijen, M. Pendharkar, J. S. Lee, S. Koelling, L. Kouwenhoven, C. Palmstrom, H. Zhang, E. P.A.M. Bakkers

Eindhoven University of Technology

PWe10 : Theoretical Study of a Cubic Transmon-transmon Coupled System

S. Masuda, A. Noguchi, H. Takahashi, K. Koshino, Y. Nakamura

Tokyo Medical and Dental University

PWe11 : Rapid Quantum State Transfer Between a Superconducting Qubit and an Itinerant Microwave Pulse

Y. Sunada, S. Kono, J. Ilves, S. Tamate, Y. Tabuchi, Y. Nakamura

The University of Tokyo

PWe12 : Quasi-particle Dynamics in a Strongly Driven Circuit-QED System

S. Majumder, T. Bera, V. Singh

Indian Institute of Science

PWe13 : Extension of Coupled Mode Equations Describing Travelling Wave Parametric Amplification

T. Dixon, P. J. Meeson, J. M. Williams, C. D. Shelly

National Physical Laboratory / University of London

PWe14 : Coupling Superconducting High Impedance Resonator to Bilayer Graphene Qubits

L. Gächter, M. Eich, A. Kurzmann, R. Garreis, C. Tong, A. Landig, J. Koski, B. Kratochwil, P. Rickhauser, M. Masseroni, K. Watanabe, T. Taniguchi, P. Märki, T. Ihn, K. Ensslin

ETH Zurich

PWe15 : Modelling the Ultra-strongly Coupled Spin-boson Model with Unphysical Modes

N. Lambert, S. Ahmed, M. Cirio, F. Nori

RIKEN

PWe16 : Selection Rules of Quantum Transitions Observed in Superconducting Flux Qubit-resonator Circuits in the Ultra-strong Coupling Regime

Z. Ao, F. Yoshihara, T. Fuse, S. Kim, S. Ashhab, K. Kakuyanagi, S. Saito, T. Shitara, K. Koshino, T. Aoki, K. Semba

Waseda University / NICT

PWe17 : Towards Entanglement-enhanced Detection of a Field Displacement in a Superconducting Microwave Resonator

A. Fujiwara, A. Noguchi, H. Takahashi, S. Masuda, Y. Nakamura

The University of Tokyo

PWe18 : Variational Analysis of the Ground State of a Circuit QED System in the Deep-strong Coupling Regime Coupled to an Environment

T, Shitara, M. Bamba, F. Yoshihara, T. Fuse, K. Semba, K. Koshino

Tokyo Medical and Dental University

PWe19 : Probing the Spin Entanglement of a Cooper Pair with Microwave Photons

M. Villiers, V. Amblard, M. Delbecq, A. Cottet, Z. Leghtas, T. Kontos

ENS, Université PSL, CNRS, Sorbonne Université, Université Paris-Diderot / INRIA

PWe20 : Differential Squid Detection of Dilute Spin Systems on Hybrid Microwave Devices in Large Magnetic Fields

J. Cochran, G. Franco, I. Chiorescu

National High Magnetic Field Laboratory / Florida State University

PWe21 : Hybrid Optical Microcavities for the Study of Nanoparticles

B. L. Severin, A. A. P. Trichet, J. M. Smith

University of Oxford

PWe22 : Anomalous Surface Magnetisation in Nonsymmorphic, Multiband Superconductor In_2Bi

W. Kuang, G. Lopez-Polin, G. Whitehead, H. Lee, F. Guinea, N. Walet, O. V. Yazyev, A. Principi, I. V. Grigorieva

University of Manchester

PWe23 : Application of the Cooper-pair Transistor as a Supercurrent Switch for Superconducting Circuits

J. Tanarom, H. Shimada

The University of Electro-Communications

PWe24 : Modelling the Full Electromagnetic Behavior of a Cascade of Superconducting Planes Suspended in a Waveguide

B. van Straaten

Oxford University / Cambridge University

PWe25 : Long Range Current Correlation for Adjacent Small Josephson Junction Devices

T. Watanabe, Y. Mizugaki, H. Shimada

The University of Electro-Communications

PWe26 : Probing Unconventional Superconductivity at the $LaAlO_3/SrTiO_3$ Interface

G. Huitenga, J. C. de Boer, A.E.M. Smink, W.G. van der Wiel, F.A.Zwanenburg, A. Brinkman

University of Twente

PWe27 : Supercurrent Reduction through Voltage-control of Kinetic Phase

M. Onizaki, Y. Hashimoto, T. Nakamura, S. Katsumoto

The University of Tokyo

PWe28 : Spin Amplification under Long-range Ising Interactions

I. Iakoupov, V. M. Bastidas, Y. Matsuzaki, W. J. Munro, S. Saito

NTT Basic Research Laboratories

PWe29 : Time-dependent Phase Velocity of Propagating Spin Wave Packet in GaAs Quantum well

Y. Tanaka, Y. Kunihashi, H. Sanada, K. Onomitsu, M. Kohda, J. Nitta, H. Gotoh

NTT Basic Research Laboratories

PWe30 : Effect of Coupling via Spin Pumping in Oscillating of Spin-torque Oscillators

H. Idani, Y. Utsumi

Mie University

PWe31 : Tunneling Properties of EuO/Si Spin Filter Junctions

R. Ohsugi, H. Omi, Y. Krockenberger, A. Fujiwara

NTT Basic Research Laboratories

PWe32 : Effect of Coulomb Interaction on Spin Pumping under Magnetic Precession

H. Yamamoto, K. Hashimoto, C. Uchiyama

University of Yamanashi

PWe33 : Majorana Braiding Dynamics and Non-Abelian Statistics in Time-reversal Symmetry Breaking Topological Superconductor

T. Sanno, S. Miyazaki, T. Mizushima, S. Fujimoto

Osaka University

PWe34 : Robust Micro-magnet Geometries for the Study of Majorana Zero Modes in Low g-factor Materials

S. Turcotte, S. Boutin, J. C. Lemyre, I. Garate, M. Pioro-Ladrière

University of Sherbrooke

PWe35 : Photon Assisted Tunneling of Zero Modes in a Majorana Wire

D. Sabonis, D. M. T. van Zanten, J. Suter, J. I. Vayrinen, T. Karzig, D. I. Pikulin, E. C. T. O'Farrell, D. Razmadze, K. D. Petersson, P. Krogstrup, C. M. Marcus

University of Copenhagen

PWe36 : Tomography & Three Dimensions (3D) Electron Microscopy Imaging for Nanowires Decorated with Nanoparticles

S. Okasha, T. Kasama, V. Miriam J. B. Wagner

Kyushu University

PWe37 : Giant Gate Control of Spin-orbit Interaction in III-V Semiconductor Nanowire

K. Takase, K. Tateno, S. Sasaki

NTT Basic Research Laboratories

PWe38 : InSb Nanowires for Advanced Quantum Devices

M. Rossi, G. Badawy, S. Gazibegovic, R. L. M. Op het Veld, M. A. Verheijen, J. S. Lee, M. Pendharkar, C. J. Palmstrom, E. P. A. M. Bakkers

Eindhoven University of Technology

PWe39 : 6 Orders of Magnitude Control of Electrical Conductivity of Sb-Doped SnO_2 Nanowires via True Vapor-Liquid-Solid Process

Z. Zhu, K. Nagashima, T. Takahashi, M. Suzuki, K. Nakamura, M. Kanai, G. Zhang, T. Hosomi, T. Yasui, Y. Baba, T. Yanagida

Nagoya University

PWe40 : Integrating High Efficiency Single Infrared Photon Detectors with Fast Reset Times

I. R. Berkman, B. B. Xu, S. Xie, G. G. de Boo, G. Hu, C. Yin, S. Rogge

UNSW

PWe41 : Vertical Surrounding-gate Transistor Using InP Nanowires

Y. Katsumi, H.Gamo, T.Akamatsu, J. Motohisa, K. Tomioka

Hokkaido University

PWe42 : Performance Analysis of InAs/InP Core-shell Nanowire Vertical Surrounding-gate Transistors

H. Gamo, T. Akamatsu, J. Motohisa, K. Tomioka

Hokkaido University

PWe43 : Electrical Degradation of ITO Contact Electrodes on Metal Oxide Nanowires

H. Zeng, T. Takahashi, M. Kanai, G. Zhang, T. Hosomi, K. Nagashima, T. Yanagida

Kyushu University

PWe44 : Post-Seed Engineering for Synthesizing Monodispersely Sized ZnO Nanowires

X. Zhao, K. Nagashima, G. Zhang, T. Hosomi, Y. Akihiro, M. Kanai, T. Takahashi, M. Suzuki, B. Samransuksamer, T. Yanagida

Kyushu University

PWe45 : Fabrication of p-Si/i-Ge Core-shell and p-Si/i-Ge/p-Si Core-double Shell Nanowires by Bottom-up and Top-down Methods

X. Zhang, W. Jevasuwan, N. Fukata

NIMS / University of Tsukuba

PWe46 : Sn Concentration Dependent Growth Direction of Au-Sn Catalyzed $Ge_{1-x}Sn_x$ Nanowires

Y. Sun, R. Matsumura, W. Jevasuwan, N. Fukata

MANA, NIMS / University of Tsukuba

PWe47 : Site-controlled Vertical InP Nanowires by Self-assembled Indium Particle Array

G. Zhang, T. Tawara, H. Gotoh

NTT Nanophotonics Center / NTT Basic Research Laboratories

PWe48 : Growth of Dilute Nitride Core-Multishell Heterostructured Nanowires

M. Yukimune, R. Fujiwara, F. Ishikawa

Ehime University