International Symposium on Nanoscale Transport and Technology
- ISNTT2009 -
January 20(Tue.) – 23(Fri.), 2009
NTT Atsugi R&D Center
Kanagawa, Japan

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  Kouichi Semba (NTT BRL) Co-Chair
  Toshimasa Fujisawa (Tokyo Tech) Co-Chair
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  Li Lu (Chinese Academy of Sci.)
  Junsaku Nitta (Tohoku Univ.)
  Shintaro Nomura (Univ. of Tsukuba)
  Fujio Shimizu (Univ. of Electro-Comm.)
  Seigo Tarucha (Univ. of Tokyo)
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Sponsored by:
NTT Basic Research Laboratories
Partly supported by:
JST-DFG Strategic Japanese-German Cooperative Program
JSPS Grants-in-Aid for Scientific Research Programs
### ISNTT2009 Time Table

#### January 20th (Tuesday)

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<th>Time</th>
<th>Activity</th>
<th>Speaker</th>
<th>Session</th>
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<tr>
<td>10:10-10:50</td>
<td>Coffee Break (10:50-11:20)</td>
<td>Heiblum (Plenary)</td>
<td>Tu-01</td>
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<tr>
<td>11:50-12:10</td>
<td>Coffee Break (10:50-11:20)</td>
<td>Khaetskii</td>
<td>Tu-03</td>
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<tr>
<td>12:10-12:30</td>
<td>Coffee Break (10:50-11:20)</td>
<td>Kamata</td>
<td>Tu-04</td>
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<tr>
<td>13:50-14:20</td>
<td>Lunch (12:30-13:50)</td>
<td>Lee (Invited)</td>
<td>Tu-05</td>
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<tr>
<td>14:20-14:50</td>
<td>Lunch (12:30-13:50)</td>
<td>Nogues (Invited)</td>
<td>Tu-06</td>
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<tr>
<td>14:50-15:10</td>
<td>Lunch (12:30-13:50)</td>
<td>Mukai</td>
<td>Tu-07</td>
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<tr>
<td>15:10-15:40</td>
<td>Lunch (12:30-13:50)</td>
<td>Schmiedmayer (Invited)</td>
<td>Tu-08</td>
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<tr>
<td>16:10-16:40</td>
<td>Coffee Break (15:40-16:10)</td>
<td>Geelhaar (Invited)</td>
<td>Tu-09</td>
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<tr>
<td>16:40-17:00</td>
<td>Coffee Break (15:40-16:10)</td>
<td>Zhang</td>
<td>Tu-10</td>
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<tr>
<td>17:00-17:20</td>
<td>Coffee Break (15:40-16:10)</td>
<td>Claeslon</td>
<td>Tu-11</td>
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<tr>
<td>17:30-17:50</td>
<td>Poster Session I (17:20-19:00)</td>
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#### January 21st (Wednesday)

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<tr>
<th>Time</th>
<th>Activity</th>
<th>Speaker</th>
<th>Session</th>
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<tbody>
<tr>
<td>9:30-10:10</td>
<td>Opening (9:50-10:10)</td>
<td>Leggett (Special)</td>
<td>We-01</td>
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<tr>
<td>10:10-10:30</td>
<td>Coffee Break (10:30-11:00)</td>
<td>Tsuchiya</td>
<td>We-03</td>
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<tr>
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<td>Coffee Break (10:30-11:00)</td>
<td>Morton (Invited)</td>
<td>We-04</td>
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<td>11:30-12:00</td>
<td>Coffee Break (10:30-11:00)</td>
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<td>12:00-12:20</td>
<td>Coffee Break (10:30-11:00)</td>
<td>Khalafalla</td>
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<td>12:10-13:50</td>
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<td>15:10-15:30</td>
<td>Lunch (12:30-13:50)</td>
<td>Shinkai</td>
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<td>15:30-15:50</td>
<td>Lunch (12:30-13:50)</td>
<td>Sachrajda</td>
<td>We-11</td>
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<td>16:10-16:40</td>
<td>Coffee Break (15:50-16:20)</td>
<td>Roch (Invited)</td>
<td>We-12</td>
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<td>16:40-17:00</td>
<td>Coffee Break (15:50-16:20)</td>
<td>Deacon</td>
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<td>Coffee Break (15:50-16:20)</td>
<td>Kawabata</td>
<td>We-14</td>
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<td>17:30-17:50</td>
<td>Coffee Break (15:50-16:20)</td>
<td>Kambara</td>
<td>We-15</td>
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#### Poster Session I (17:20-19:00)

#### Poster Session II (17:50-19:30)

(We-02: canceled)
<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
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<tr>
<td>9:00-9:30</td>
<td>Appelbaum</td>
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<td>9:30-9:50</td>
<td>Faniel</td>
<td>Th-02</td>
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<td>9:50-10:10</td>
<td>Otsuka</td>
<td>Th-03</td>
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<td>10:10-10:30</td>
<td>Kosaka</td>
<td>Th-04</td>
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<td><strong>Coffee Break</strong></td>
<td>(10:30-11:00)</td>
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<td>11:00-11:30</td>
<td>Friedland</td>
<td>Th-05</td>
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<td>11:30-11:50</td>
<td>Hashimoto</td>
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<td>11:50-12:10</td>
<td>Oto</td>
<td>Th-07</td>
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<td>12:10-12:30</td>
<td>Nomura</td>
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<td><strong>Lunch</strong></td>
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<td>13:50-14:20</td>
<td>Clarke</td>
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<td>14:20-14:50</td>
<td>Siddiqi</td>
<td>Th-10</td>
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<td>14:50-15:10</td>
<td>Nori</td>
<td>Th-11</td>
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<td>15:10-15:40</td>
<td>Delsing</td>
<td>Th-12</td>
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<td>15:40-16:00</td>
<td>Semba</td>
<td>Th-13</td>
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<td>16:30-17:00</td>
<td>Pekola</td>
<td>Th-14</td>
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<td>17:00-17:30</td>
<td>Hiramoto</td>
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<td>17:30-17:50</td>
<td>Nishiguchi</td>
<td>Th-16</td>
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**January 23rd (Friday)**

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<th>Time</th>
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<tr>
<td>9:20-9:50</td>
<td>Mamin</td>
<td>Fr-01</td>
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<td>9:50-10:20</td>
<td>Bleszynski</td>
<td>Fr-02</td>
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<td>10:20-10:40</td>
<td>Poot</td>
<td>Fr-03</td>
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<tr>
<td>10:40-11:00</td>
<td>Mahboob</td>
<td>Fr-04</td>
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<td><strong>Coffee Break</strong></td>
<td>(11:00-11:30)</td>
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<tr>
<td>11:30-11:50</td>
<td>Russo</td>
<td>Fr-05</td>
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<td>11:50-12:10</td>
<td>Yoshida</td>
<td>Fr-06</td>
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<td>12:10-12:30</td>
<td>Nagase</td>
<td>Fr-07</td>
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<td><strong>Lunch</strong></td>
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<td>13:50-14:20</td>
<td>Esteve</td>
<td>Fr-08</td>
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<td>14:20-14:50</td>
<td>Harmans</td>
<td>Fr-09</td>
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<td>14:50-15:20</td>
<td>Tsai</td>
<td>Fr-10</td>
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<tr>
<td>15:20-15:50</td>
<td>Martinis</td>
<td>Fr-11</td>
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<td><strong>Closing</strong></td>
<td>(15:50-16:10)</td>
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**Banquet at NTT R&D Center**

<table>
<thead>
<tr>
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<tr>
<td>17:50-20:00</td>
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</table>
January 20th, Tuesday

9:50~10:10
Opening Remarks

SESSION 1 : Plenary Session

10:10~10:50
Tu-01 : Electron Interference in Two Dimensions:
   Phase measurements, controlled dephasing and phase recovery
   [PLENARY] Moty Heiblum
   Weizmann Institute of Science

10:50~11:20
COFFEE BREAK (30 min.)

SESSION 2 : Spin Hall Effect and Edge Transport

11:20~11:50
Tu-02 : Spin Hall Effects in HgTe Quantum Well Structures
   [INVITED] Laurens W. Molenkamp
   Universität Würzburg

11:50~12:10
Tu-03 : Spin Hall Edge Spin Accumulation in the Ballistic Regime:
   Role of the intrinsic mechanism
   Alexander Khaetskii and Eugene Sukhorukov
   Institute of Microelectronics Technology RAS

12:10~12:30
Tu-04 : Velocity Controlled Delay Line for Electron Wavepacket
   in the Quantum Hall Regime
   Hiroshi Kamata, Takeshi Ota, Koji Muraki, and Toshimasa Fujisawa
   NTT Basic Research Laboratories and Tokyo Institute of Technology

12:30~13:50
Lunch

SESSION 3 : Quantum Operations with Atoms

13:50~14:20
Tu-05 : Coherent Control of Pairs of Atoms in a Double-Well Optical Lattice
   [INVITED] Patricia Lee, Marco Anderlini, Benjamin Brown, Jennifer Sebb-Strabley,
   Nathan Lundblad, John Obrecht, William Phillips, and Trey Porto
   NIST & University of Maryland and US Army Research

14:20~14:50
Tu-06 : Cryogenic Microtraps for Ground State and Rydberg Atoms
   [INVITED] Gilles Nogues
   CNRS - Laboratoire Kastler Brossel

14:50~15:10
Tu-07 : Tight and Stable Micro Trap for Neutral Atom with Superconductor
   Tetsuya Mukai, Christoph Hufnagel, Hideyuki Sawamura, and Fujio Shimizu
   NTT Basic Research Laboratories and CREST-JST

15:10~15:40
Tu-08 : A Quantum Interconnect between the Solid State
   [INVITED] - Atomic - photonic quantum worlds
   Jörg Schmiedmayer
   TU-Wien
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<tr>
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<tr>
<td>15:40～16:10</td>
<td>COFFEE BREAK (30 min.)</td>
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<tr>
<td>16:10～16:40</td>
<td>SESSION 4 : Growth and Characterization of Novel Materials</td>
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<td>Tu-09</td>
<td>【INVITED】In-Situ Study of Catalyst-Induced GaN Nanowire Growth</td>
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<td>Lutz Geelhaar</td>
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<td>Paul-Drude-Institut für Festkörperelektronik</td>
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<td>16:40～17:00</td>
<td>Tu-10: Parallel-Aligned Lateral Nanowires on GaAs Substrates</td>
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<td>Using Vapor-Liquid-Solid Method</td>
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<td>Guoqiang Zhang, Kouta Tateno, and Hidetoshi Nakano</td>
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<td>NTT Basic Research Laboratories</td>
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<td>17:00～17:20</td>
<td>Tu-11: Defects and Electrical Properties of LaAlO$_3$/SrTiO$_3$ Hetero-Interfaces</td>
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<td>A. Kalabukhov, Y. Boikov, I. Serenkov, V. Sakharov, R. Gunnarsson, J. Börjesson, E. Olsson, D. Winkler, and T. Claeson</td>
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<td>Chalmers University of Technology</td>
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<tr>
<td>17:20～19:00</td>
<td>POSTER Session I</td>
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<td>19:00～20:00</td>
<td>WELCOME PARTY at NTT Atsugi R&amp;D Center</td>
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January 21st, Wednesday

**SESSION 1: Topology, Statistics, and Hierarchy**

09:30~10:10
**We-01:** Some Thoughts on the Prospects for Topological Quantum Computation  
[SPECIAL] Tony Leggett  
*University of Illinois*

**We-02:** Canceled

10:10~10:30
**We-03:** Effects of Hierarchical Structure in Superconducting Networks  
Satoshi Tsuchiya, Takeshi Toshima, Hiroyoshi Nobukake, Katsuhiko Inagaki,  
and Satoshi Tanda  
*Hokkaido University*

10:30~11:00  
COFFEE BREAK (30 min.)

**SESSION 2: Nuclear Spin and Dopants in Silicon**

11:00~11:30
**We-04:** Solid State Quantum Memory using the $^{31}\text{P}$ Nuclear Spin:  
[INVITED] Coherent electron spin storage beyond a second  
John J. L. Morton, Alexei M. Tyryshkin, Richard M. Brown, Shyam Shankar,  
Brendon W. Lovett, Arzhang Ardavan, Thomas Schenkel, Eugene E. Haller,  
Joel W. Ager and S. A. Lyon  
*Oxford University*

11:30~12:00
**We-05:** Magnetic-Field Control of the Bell States Formed by Nuclear-Spins and Electron-Spins of Phosphorus in Silicon  
M. Eto, and K. M. Itoh  
*Keio University*

12:00~12:20
**We-06:** Detection and Position Analysis of Single and Coupled Acceptors in Silicon Nano Field-Effect Transistors  
M. A. H. Khalafalla, Y. Ono, K. Nishiguchi, A. Fujiwara  
*NTT Basic Research Laboratories*

12:20~12:30  
Symposium Photo

12:30~13:50  
Lunch
SESSION 3 : Semiconductor Quantum Dots and Qubits

13:50～14:20
We-07 : Control of Electron and Nuclear Spins in Semiconductor Quantum Dots
[INVITED] Lieven Vandersypen
TUDelft

14:20～14:50
We-08 : Back-Action of Quantum Point Contact Charge Detectors
ETH Zurich

14:50～15:10
We-09 : Charge Detection of Electrically Driven Single-Electron Spin Resonance in a Slanting Zeeman Field
ICORP-JST

15:10～15:30
We-10 : Correlated Coherent Oscillations in Coupled Semiconductor Charge Qubits
Gou Shinkai, Toshiaki Hayashi, Takeshi Ota, and Toshimasa Fujisawa
NTT Basic Research Laboratories and Tokyo Institute of Technology

15:30～15:50
We-11 : High Speed Charge Detection for Multiple Quantum Dot Circuits
J. Kycia, L. Gaudreau, J. Mason, S. Studenikin, A. Kam, and A. S. Sachrajda
NRC Canada

15:50～16:20
COFFEE BREAK (30 min.)

SESSION 4 : Correlation in Novel Junctions

16:20～16:50
We-12 : Observation of a Quantum Phase Transition in a Single-Molecule Quantum Dot
[INVITED] Nicolas Roch, Serge Florens, Vincent Bouchiat, Wolfgang Wernsdorfer, and Franck Balestro
Néel Institut and CNRS

16:50～17:10
We-13 : Kondo Correlations and Andreev Conductance in Self-Assembled InAs Quantum Dots Contacted with Superconducting and Normal Leads
University of Tokyo

17:10～17:30
We-14 : Theory of Josephson Effect through Spintronics Materials
Shiro Kawabata, Yasuhiro Asano, Yukio Tanaka, and Satoshi Kashiwaya
AIST

17:30～17:50
We-15 : Anomalous Transport through p-wave Superconducting Filaments in the 3-K Phase of Sr2RuO4
H. Kambara, S. Kashiwaya, H. Yaguchi, Y. Asano, Y. Tanaka, and Y. Maeno
AIST

17:50～19:30
POSTER Session II
January 22nd, Thursday

SESSION 1 : Spin Transport and Spin Control

09:00～09:30
**Th-01 : Spin Injection, Transport, and Control in Silicon**
【INVITED】Ian Appelbaum  
*University of Maryland*

09:30～09:50
**Th-02 : Experimental Investigation of Spin Interference Phenomena in InGaAs/InAlAs Rectangular Loop Arrays**
S. Faniel, T. Koga, and Y. Sekine  
*Hokkaido University*

09:50～10:10
**Th-03 : Detection of Spin Polarization with a Side Coupled Quantum Dot**
Tomohiro Otsuka, Eisuke Abe, Yasuhiro Iye, and Shingo Katsumoto  
*The University of Tokyo*

10:10～10:30
**Th-04 : Coherent Spin State Transfer from Light to Electrons in a Semiconductor**
H. Kosaka, H. Shigyou, T. Inagaki, Y. Mitsumori, Y. Rikitake, H. Imamura  
T. Kutsuwa, M. Kuwahara, and K. Edamatsu  
*Tohoku University and CREST-JST*

10:30～11:00  
COFFEE BREAK (30 min.)

SESSION 2 : Quantum Hall Effect

11:00～11:30
**Th-05 : High-Mobility Electron Transport on Cylindrical Surfaces**
【INVITED】Klaus-Jürgen Friedland  
*Paul-Drude-Institut für Festkörperelektronik*

11:30～11:50
**Th-06 : Real-Space Imaging of Quantum Hall Transition**
K. Hashimoto, C. Sohrmann, J. Wiebe, T. Inaoka, Y. Hirayama, R. A. Römer,  
R. Wiesendanger, and M. Morgenstern  
*Hamburg University, Tohoku University, and JST-ERATO*

11:50～12:10
**Th-07 : Spin Polarization Imaging of Quantum Hall Current by Scanning Kerr Microscope**
R. Inaba, T. Yamada, K. Oto, K. Muro, Y. Hirayama, N. Kumada, and H. Yamaguchi  
*Chiba University*

12:10～12:30
**Th-08 : Electron Density Dependence of Photoluminescence Peak Splitting in a Gated Undoped Quantum Well**
S. Nomura, M. Yamaguchi, H. Tamura, T. Akazaki, T. Maruyama, S. Miyashita,  
and Y. Hirayama  
*University of Tsukuba and NTT Basic Research Laboratories*

12:30～13:50  
Lunch
**SESSION 3 : Superconducting Quantum Circuits and Qubits**

13:50~14:20  
**Th-09 : Near-Quantum-Limited SQUID Amplifier**  
[INVITED] John Clarke and D. Kinion  
*University of California, Berkeley*

14:20~14:50  
**Th-10 : The Josephson Chirped Amplifier:**  
[INVITED] A dispersive, non-switching threshold detector  
Irfan Siddigi  
*University of California, Berkeley*

14:50~15:10  
**Th-11 : Designing Superconducting Qubit Circuits That Exhibit Atomic-Physics-Like Phenomena on a Chip**  
Franco Nori, J.Q. You, Yu-xi Liu, L.F. Wei, and S. Ashhab  
*RIKEN, CREST-JST, and University of Michigan*

15:10~15:40  
**Th-12 : Tunable Cavities for Qubit Coupling and Parametric Amplifiers and Oscillators**  
[INVITED] Per Delsing  
*Chalmers University of Technology*

15:40~16:00  
**Th-13 : Quantum Coherence and Readout of the Persistent Current Qubit**  
*NTT Basic Research Laboratories*

16:00~16:30  
COFFEE BREAK (30 min.)

**SESSION 4 : Nanoelectronics and Single-Electron Devices**

16:30~17:00  
**Th-14 : Hybrid Single-Electron Turnstile**  
*Helsinki University of Technology*

17:00~17:30  
**Th-15 : Silicon Nanowire FETs and Single-Electron/Hole Transistors**  
[INVITED] Under Uniaxial Strain at Room Temperature  
Toshiro Hiramoto, Jiezhi Chen, YeonJoo Jeong, and Takuya Saraya  
*The University of Tokyo*

17:30~17:50  
**Th-16 : Single-Electron-Based Stochastic Circuit for Pattern Recognition Using Nano-FETs**  
Katsuhiko Nishiguchi and Akira Fujiwara  
*NTT Basic Research Laboratories*

17:50~20:00  
Banquet at NTT Atsugi R&D Center
January 23rd, Friday

SESSION 1: Electromechanical Systems

09:20~09:50
Fr-01: Nanoscale Magnetic Resonance Imaging Based on Ultrasensitive Force Detection
[INVITED]
H.J. Mamin
IBM Research Division

09:50~10:20
Fr-02: Measurements of Persistent Currents in Normal Metal Rings
[INVITED] Using a Micromechanical Magnetometer
A.C. Bleszynski-Jayich, W.E. Shanks, and J.G.E. Harris
Yale University

10:20~10:40
Fr-03: Position Detection and Backaction of a Mechanical Resonator Integrated in a dc SQUID Detector
M. Poot, S. Etaki, I. Mahboob, K. Onomitsu, H. Yamaguchi, Y. M. Blanter,
and H. S. J. van der Zant
Delft University of Technology

10:40~11:00
Fr-04: Symmetry Lifting in an Electromechanical Resonator
Imran Mahboob, Charline Froitier, and Hiroshi Yamaguchi
NTT Basic Research Laboratories

11:00~11:30 COFFEE BREAK (30 min.)

SESSION 2: Graphene Layers

11:30~11:50
Fr-05: Tunable Band-Structure in Double-Gated Trilayer Graphene
Saverio Russo, Monica F. Craciun, Michihisa Yamamoto, Jeroen B. Oostinga,
Alberto F. Morpurgo, and Seigo Tarucha
The University of Tokyo and Delft University of Technology

11:50~12:10
Fr-06: Magneto-Capacitance Measurement of Multilayer Graphene
Takahide Yoshida and Kenichi Oto
Chiba University

12:10~12:30
Fr-07: Local Conductance of Deformed Graphene Near Atomic Steps on SiC
M. Nagase, H. Hibino, H. Kagoshima, and H. Yamaguchi
NTT Basic Research Laboratories

12:30~13:50 Lunch
SESSION 3 : Superconducting Qubits and Circuit QED

13:50～14:20  
Fr-08 : Transition from Weak to Strong Measurement and Single-Shot Readout in Cooper Pair Boxes  
CEA SACLAY

14:20～14:50  
Fr-09 : Flux Qubits: Tunable parameters and fast low-noise readout  
[INVITED] Kees Harmans, Floor Paauw, Arkady Fedorov, Pol Forn-Diaz, Thomas Picot,  
Pieter de Groot, and Hans Mooij  
Delft University of Technology

14:50～15:20  
Fr-10 : Toward Scalable Superconducting Qubits  
NEC and RIKEN

15:20～15:50  
Fr-11 : Generating Arbitrary Photon States with Superconducting Qubits:  
[INVITED] The quantum digital to analog converter  
John Martinis  
UC Santa Barbara

Closing
Poster Session I (Jan. 20, Tuesday)

17:20~19:00

PTu-01 : Characteristics of Nanoscale “In-Plane-Gate” Devices
Y. Komatsuzaki, K. Higashi, T. Kyougoku, K. Onomitsu, A. Kawaharazuka, and Y. Horikoshi
Waseda University

PTu-02 : Onsager Relations for Nonlinear Thermoelectric Quantum Transport
Eiki Iyoda, Yasuhiro Utsumi, Takeo Kato, and Keiji Saito
The University of Tokyo

PTu-03 : Asymmetric Mobility of Electrons and Holes with Respect to Quantum-Well Potential in a Double-Gate SIMOX MOSFET
Y. Niida, K. Takashina, Y. Ono, A. Fujiwara, Y. Hirayama, and K. Muraki
NTT Basic Research Laboratories and Tohoku University

PTu-04 : In-Plane Transport in a Double Layer Crystalline Silicon Structure with an SiO₂ Barrier
NTT Basic Research Laboratories

PTu-05 : Exploring the Fractional Quantum Hall Regime around Filling Factor 7/11
Gerardo Gamez and Koji Muraki
NTT Basic Research Laboratories

PTu-06 : Nuclear Spin Polarization Induced by Breakdown of Fractional Quantum Hall Effect
Minoru Kawamura, Masashi Ono, Yoshiaki Hashimoto, Shingo Katsumoto, and Tomoki Machida
The University of Tokyo, RIKEN, and PRESTO-JST

PTu-07 : Nuclear Magnetic Resonance Using Oscillating Electron Spin Domain Walls at ν = 2/3 Quantum Hall Regime
Shinji Watanabe, Gen Igarashi, Norio Kumada, and Yoshiro Hirayama
Tohoku University

PTu-08 : Nuclear Magnetic Probing of Electron Spin Physics in Quantum Hall Systems
Norio Kumada, Koji Muraki, Toshimasa Fujisawa, and Yoshiro Hirayama
NTT Basic Research Laboratories

PTu-09 : Low-Frequency Fluctuations of Skyrmions in a Wire-Like Quantum Hall System Detected by Selectively Polarized Nuclear Spins
T. Kobayashi, N. Kumada, T. Ota, S. Sasaki, and Y. Hirayama
NTT Basic Research Laboratories and Tohoku University

PTu-10 : The Electron Spin - Nuclear Spin Interaction in the Double Quantum Dot with Different g-Factors
R. Takahashi, K. Kono, S. Tarucha, and K. Ono
RIKEN and Tokyo Institute of Technology

PTu-11 : Kondo-Fano Effect in a Side-Coupled Double Quantum Dot
NTT Basic Research Laboratories

PTu-12 : Kondo Effects in Triangular Triple Quantum Dots
A. Oguri, T. Numata, Y. Nisikawa, and A. C. Hewson
Osaka City University

PTu-13 : Spin and Pseudospin Kondo Effects in a Laterally Coupled Double Quantum Dot
T. Kubo, Y. Tokura, S. Amaha, T. Hatano, and S. Tarucha
ICORP-JST
PTu-14 : Gate Tuneable Proximity Supercurrent in Single Self Assembled InAs Quantum Dots  
The University of Tokyo

PTu-15 : Quantitative Evaluation and Tuning of Spin-Orbit Interaction in InAs Self-Assembled Quantum Dots  
The University of Tokyo

PTu-16 : Aharonov-Bohm Oscillation in Parallel Coupled Vertical Double Dot  
T. Hatano, T. Kubo, Y. Tokura, S. Amaha, S. Teraoka, and S. Tarucha  
ICORP-JST

PTu-17 : Fluctuation Theorem and Full Counting Statistics in a Quantum Dot Aharonov-Bohm Interferometer  
Yasuhiro Utsumi and Keiji Saito  
The University of Tokyo

PTu-18 : Wave Function Imaging in Vertical Quantum Dots Using Resonant Tunneling Spectroscopy  
ICORP- JST

PTu-19 : Temperature Dependence of Electron Transport between Quantum Dots and Electron Gas  
Yoko Sakurai, Shintaro Nomura, Yukitaka Takada, Kenji Shiraishi, Masakazu Muraguchi, Tetsuo Endoh, Mitsuhisa Ikeda, Katsunori Makihara, and Seiichi Miyazaki  
University of Tsukuba

PTu-20 : Order-N Electronic Structure Calculation of a Si Quantum Dot  
Shintaro Nomura and Toshiaki Itaka  
University of Tsukuba

PTu-21 : Enhanced Spin Hall Effect in Semiconductor Anti-Dot Structures  
Mikio Eto and Tomohiro Yokoyama  
Keio University

PTu-22 : Magnetic Structures and Dynamics of Domain Wall in Geometrically Confined Region under Current  
Katsuyoshi Matsushita, Jun Sato, and Hiroshi Imamura  
AIST

PTu-23 : Moved to Poster Session II (Wednesday)  
Impurity Band Structure of Boron-Doped Diamond  
Takashi Inushima  
Tokai University

PTu-24 : Size-Dependent Optical Properties of Freestanding GaAs Nanowires  
Guoqiang Zhang, Kouta Tateno, Haruki Sanada, Takehiko Tawara, Hideki Gotoh, and Hidetoshi Nakano  
NTT Basic Research Laboratories

PTu-25 : Three-Dimensional Tomography of III-V Semiconductor Nanowires  
Toshitsugu Mitate, Toshio Iizuka, and Seiichiro Mizuno  
NTT Advanced Technology Corporation

PTu-26 : Strained Quantum Wells in Scrolled Structures Studied by $\mu$-Photoluminescence  
R. Hey, M. Ramsteiner, P. Santos, and K-J. Friedland  
Paul-Drude-Institute for Solid State Electronics
PTu-27 : Three-Dimensional Nanofabrication of Resist Materials Using Electron Beam Lithography
K. Yamazaki and H. Yamaguchi
NTT Basic Research Laboratories

PTu-28 : A New Angled Ion Etching Method to Fabricate a Nanostructure and Its Resonance Characteristic
V. K. Singh, K. Yamazaki, T. Tawara, H. Okamoto, and H. Yamaguchi
NTT Basic Research Laboratories

PTu-29 : Bit Operation in a Parametrically Pumped Electromechanical Resonator
Imran Mahboob and Hiroshi Yamaguchi
NTT Basic Research Laboratories

PTu-30 : Vibration Control in GaAs Micromechanical Resonators by Optically Induced Piezoelectric Backaction
Hajime Okamoto, Daisuke Ito, Koji Onomitsu, Haruki Sanada, Hideki Gotoh, Tetsuomi Sogawa, and Hiroshi Yamaguchi
NTT Basic Research Laboratories

PTu-31 : Detecting Quantum-Coherent Nanomechanical Oscillations Using the Current-Noise Spectrum of a Double Quantum Dot
Neill Lambert and Franco Nori
RIKEN

PTu-32 : Measurements of the Magnetic Response of Mesoscopic Aluminum Rings in the Normal and Superconducting States with Cantilever Torsional Magnetometry
W.E. Shanks, A.C. Bleszynski-Jayich, B. Peaudecerf, and J. G. E. Harris
Yale University

PTu-33 : Topological states and braiding statistics using quantum circuits
J. Q. You, Xiao-Feng Shi, and Franco Nori
Fudan University and RIKEN

PTu-34 : Quantum Phase Transitions in Adiabatic Quantum Computing of Superconducting Qubits
Yu-xi Liu and Franco Nori
RIKEN and CREST-JST

PTu-35 : Macroscopic Quantum Tunneling in Intrinsic Josephson Junction Stacks Having High Josephson Plasma Frequency
NIMS and University of Tsukuba

PTu-36 : MQT and Strong Coupling Effect in High-Tc Josephson Junctions
H. Kashiwaya, T. Matsumoto, H. Shibata, S. Kawabata, Y. Tanaka, and S. Kashiwaya
AIST

PTu-37 : Conductance Oscillation in Ferromagnetic-Metal/Normal-metal/Superconductor Double Junctions
Hiroyuki Ohtori, Katsuyosi Matshita, Nobuhiko Yokoshi, and Hiroshi Imamura
University of Tsukuba and AIST

PTu-38 : Photo-Voltage Imaging of S-Sm-S Junctions
K. Tsumura, S. Nomura, T. Akazaki, and H. Takayanagi
University of Tsukuba and JSPS

PTu-39 : Josephson Effect through an Isotropic Magnetic Molecule
Minchul Lee, Thibaut Jonckheere, and Thierry Martin
Universite de la Mediterranee

PTu-40 : Significance of Superconductive Atom Chip in the Vicinity of a Surface
Christoph Hufnagel, Tetsuya Mukai, and Fujio Shimizu
NTT Basic Research Laboratories and CREST-JST
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<th>Poster Session II (Jan. 21, Wednesday)</th>
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| **PWe-01**: Andreev Transport through Carbon Nanotube Quantum Dots  
  M. Shimizu, H. Akimoto, and K. Ishibashi  
  RIKEN and Tokyo University of Science |
| **PWe-02**: Spin-Dependent Level Crossing Behavior in a Carbon Nanotube Quantum Dot  
  K. Grove-Rasmussen, H. I. Jørgensen, P. E. Lindelof, K. Muraki and T. Fujisawa  
  NTT Basic Research Laboratories |
| **PWe-03**: High Energy Electroluminescence from CVD-grown Single-Walled Carbon Nanotubes  
  Norihito Hibino, Hideyuki Maki, Tetsuya Sato, Satoru Suzuki, and Yoshihiro Kobayashi  
  Keio University and NTT Basic Research Laboratories |
| **PWe-04**: Native Defect Formation in an Atomic Layer at Near-Surface Region of Epitaxial InAs Thin Film  
  K. Kanisawa and T. Fujisawa  
  NTT Basic Research Laboratories |
| **PWe-05**: Density of States in Superlattices Observed by Scanning Tunneling Spectroscopy  
  Kyoichi Suzuki, Kiyoshi Kanisawa, Koji Onomitsu, and Koji Muraki  
  NTT Basic Research Laboratories |
| **PWe-06**: Optical Mapping of the Boundary of a Two-Dimensional Electron Gas by a Near-Field Optical Microscopy  
  H. Ito, Y. Shibata, S. Kashiwaya, Y. Ootuka, and S. Nomura  
  University of Tsukuba |
| **PWe-07**: Photoluminescence Spectra of Gated Undoped GaAs Quantum Wells at Low Electron Density with a Square-Mesh Surface Gate  
  M. Yamaguchi, S. Nomura, H. Tamura, and T. Akazaki  
  NTT Basic Research Laboratories |
| **PWe-08**: Optical Spin Coherence Tomography of an Electron in a Semiconductor Quantum Dot  
  Yoshiaki Rikitake, Hiroshi Imamura, and Hideo Kosaka  
  Sendai National College of Technology and CREST-JST |
| **PWe-09**: Tomographic Spin State Measurement of Electrons in a Semiconductor  
  Takahiro Inagaki, Hideo Kosaka, Yasuyoshi Mitsumori, Keichi Edamatsu,  
  Yoshiaki Rikitake, and Hiroshi Imamura  
  Tohoku University |
| **PWe-10**: Frequency and Polarization Characteristics of Correlated Photon-Pair Generation in Silicon Wire Waveguide  
  Ken-ichi Harada, Hiroki Takesue, Hiroshi Fukuda, Tai Tsuchizawa,  
  Toshifumi Watanabe, Koji Yamada, Yasuhiro Tokura, and Sei-ichi Itabashi  
  NTT Basic Research Laboratories and Japan Science and Technology Agency |
| **PWe-11**: Detection and Manipulation of a Single Electron Spin of Nitrogen Vacancy Center in Diamond and its Application of Weak Measurement  
  Sota Kagami and Yutaka Shikano  
  Tokyo Institute of Technology |
| **PWe-12**: Phosphorus Donor Spin States under Low Magnetic Field  
  H. Morishita, H. Tanaka, K. Semba, L. S. Vlasenko, K. Sawano, Y. Shiraki,  
  M. Eto, and K. M. Itoh  
  Keio University and NTT Basic Research Laboratories |
PWe-13 : Spin Resonance of Two Dimensional Hole System and B=0 Spin Splitting
S. Teraoka, S. Amaha, T. Hatano, T. Kubo, Y. Tokura, Y. Ohno, H. Ohno, and S. Tarucha
ICORP-JST

PWe-14 : Nonequilibrium Transmission-Phase Measurement of Parallel Quantum Point Contacts Using Magnetic Focusing
NTT Basic Research Laboratories

PWe-15 : Observation of Quantum Phase Shift in an Aharonov-Bohm Ring with a Fully Controlled Flying Charge Qubit
M. Yamamoto, C. Bäuerle, and S. Tarucha
The University of Tokyo

PWe-16 : Coulomb Drag in Vertically Coupled Double Quantum Wires and Quantum Point Contacts
Koji Muraki, Huang-Ming Lee, Edward Y. Chang, and Yoshiro Hirayama
NTT Basic Research Laboratories

PWe-17 : Effect of Disorder on the Quantum Coherence in Mesoscopic Wires
Yuji Niimi, Y. Baines, T. Capron, D. Mailly, F.-Y. Lo, A. D. Wieck, T. Meunier, L. Saminadayar, and C. Bäuerle
CNRS, Université Joseph Fourier and Tohoku University

PWe-18 : Numerical Study of Resonant Tunneling in a Tomonaga-Luttinger Liquid
Yuji Hamamoto and Takeo Kato
The University of Tokyo

PWe-19 : Single Electron Circuit as a Multi-Functional Gate
S. W. Jung, B. H. Noh, S.H. Sakong, and Y. H. Jeong
National Center for Nanomaterials Technology

PWe-20 : Terahertz Photon Counting Detector
Hideomi Hashiba, Vladimir Antonov, Leonid Kulik, Alexander Tzalenchuk, and Susumu Komiyama
Royal Holloway University of London

PWe-21 : Photo-Absorption of Single InAs Quantum Dot Proved by Single Electron Transport
K. Ono, R. Takahashi, S. Amaha, T. Hatano, K. Kono, S. Tarucha, and H. Kosaka
RIKEN and CREST-JST

Makoto Kuwahara, Takeshi Kutsuwa, Keiji Ono, and Hideo Kosaka
CREST-JST

PWe-23 : Spin State Measurement through Adiabatic Charge Transfer in Coupled Quantum Dots
Nobuhiko Yokoshi, Hiroshi Imamura, and Hideo Kosaka
CREST-JST and AIST

PWe-24 : High Frequency on-Chip Lock-in Detection of Impedance in a Quantum Dot
Takeshi Ota, Toshiaki Hayashi, Koji Muraki, and Toshimasa Fujisawa
NTT Basic Research Laboratories

PWe-25 : Quantum Interference Effects in a Laterally Coupled Double Quantum Dot with a Capacitively Coupled Quantum Dot Charge Sensor
T. Kubo, Y. Tokura, and S. Tarucha
ICORP-JST

PWe-26 : Electronic Charge and Spin States in Laterally Coupled Triple Quantum Dots
ICORP-JST
PWe-27: Electron Spin Resonance in a Double Quantum Dot on a g-Factor Controlled Quantum Well for Quantum Media Conversion  
Takeshi Kutsuwa, Makoto Kuwahara, Keiji Ono, and Hideo Kosaka  
CREST-JST

PWe-28: Circuit Design to Perform Arbitrary Single Electron Spin Rotations in Double Quantum Dots  
ICORP-JST

PWe-29: Decoherence of Coupled Spin Qubit System  
Toshifumi Itakura and Fumitada Itakura  
ASPRO TEC.

Y. Shimazu, N. Maeta, K. Ochiai, E. Shinozaki, Y. Horikawa, M. Onda, K. Tomita, and K. Yamamura  
Yokohama National University

PWe-31: Single-Artificial-Atom Lasing Using a Voltage-Biased Superconducting Charge Qubit  
J. R. Johansson, S. Ashhab, A.M. Zagoskin, and F. Nori  
RIKEN

PWe-32: Weak and Strong Measurement of a Qubit Using a Switching-Based Detector  
S. Ashhab, J. Q. You, and Franco Nori  
RIKEN and The University of Michigan

PWe-33: Quantum Analysis on Inductive Readout of a Superconducting Qubit with a Nonlinearly-Coupled SQUID Resonator  
Hayato Nakano  
NTT Basic Research Laboratories

PWe-34: Readout Flux Qubit with the Transmission Line Josephson Bifurcation Amplifier  
K. Kakuyanagi, S. Kagei, R. Koibuchi, and K. Semba  
NTT Basic Research Laboratories

PWe-35: Spectroscopic Examination of Fluctuations in a Superconducting Flux Qubit  
A. Kemp, S. Saito, and K. Semba  
NTT Basic Research Laboratories

PWe-36: Simultaneous Cooling of an Artificial Atom and its Neighboring Quantum System  
J. Q. You, Yu-xi Liu, and Franco Nori  
Fudan University and RIKEN

Toshiyuki Fujii, Munehiro Nishida, and Noriyuki Hatakenaka  
Hiroshima University

PWe-38: Resources for Measurement-Based Quantum Carry-Lookahead Adder  
Agung Trisetyarso, Rodney Van Meter, and Kohei M. Itoh  
Keio University

PTu-23: Impurity Band Structure of Boron-Doped Diamond  
Takashi Inushima  
Tokai University