Program
(30 August 2018)

Tuesday 11 morning

Conference Opening Session

R. Cristiano WOLTE13 Chairman
C. Ferdeghini Director of CNR – SPIN Institute
R.C. Spinella Director of CNR Dept. of Physical Sciences and Technologies of Matter

Session TUE 1  Semiconductor & Superconductor Devices at Low Temperature

ID72 KEY  E. Charbon, EPFL Lausanne, Switzerland and Kavli Institute of Nanoscience, Delft, the Netherlands
Cryo-CMOS Systems for the Control of Quantum Computers

ID43 INV  Y. Jin C2N, CNRS, Univ. Paris-sud, Univ. Paris-Saclay, Marcoussis, France
Ultra-low noise and low temperature readout electronics based on cryoHEMTs made at the C2N: performance and applications

ID52 INV  K. Sano Nagoya University, Furocho, Chikusaku, Nagoya, Japan
Superconducting nano-structured line drivers in Josephson-CMOS hybrid memory

ID30  A. Engel Hightec MC AG, Lenzburg, Switzerland
Superconducting and flexible multilayer high-density interconnect for low temperature electronics

ID36  A. Corna Qutech and Kavli Institute of Nanoscience, Delft Univ of Technology, Delft, the Netherlands
Cryogenic DRAM-based voltage controller for spin-based quantum computation

Session TUE 2  Q-bits with Low Temperature Devices

ID71 INV  E. Il'ichev Leibniz Institute of Photonic Technology, Jena, Germany
Quantum metamaterials composed of superconducting qubits

ID50  C. Degenhardt Central Inst. of Engineering, Electronics and Analytics, Forschungszentrum Jülich GmbH, Germany
SQuBiC1: An integrated control chip for semiconductor qubits

ID37  T. Kelly Rambus Labs USA
Some Like It Cold: Initial Testing Results for Cryogenic Computing Components

ID12  H. Homulle QuTech, Delft University of Technology, Delft, The Netherlands
QuRO: The first entirely cryogenic interface between silicon spin qubits and a programmable classical system
Tuesday 11 afternoon

POSTER SESSION: List of posters at the end of this document

Session TUE 3  Low Temperature Detectors & Readout

ID11  A. Giachero University and INFN of Milano-Bicocca, Dept. of Physics, Milan, Italy
Cryogenics microwave rf-SQUID multiplexing read-out for the calorimetric measurement of the neutrino mass

ID40  A. Paiella Dipartimento di Fisica, Sapienza Università di Roma and INFN Sez. Roma, Italy
Kinetic Inductance Detectors and readout electronics for the OLI MPO experiment

ID14  Li He Dept of Engineering Physics, Tsinghua University, Beijing, China
Comparison of JFET/MOS/HEMT Based Low Noise Charge Sensitive Preamplifiers for HPGe Detectors in Cryogenic Temperature

ID55  A. Poon Nuclear Science Division, Lawrence Berkeley National Laboratory, Berkeley, California, USA
Development of ultra-low-radioactivity front-end electronics for neutrinoless double-beta decay searches with 76Ge detectors

ID8  I. Colantoni Dublin Inst for Adv. Studies, School of Cosmic Physics/Astronomy and Astrophysics Section, Dublin, Ireland
MKIDS the next generation kilo-pixel camera

ID18  S. Di Domizio Dipartimento di Fisica – Università degli Studi di Genova and INFN, Genova, Italy
CALDER: KID-based cryogenic light detectors for rare event searches
**Wednesday 12 morning**

**Session WED 1 Low Temperature Detectors & Devices**

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<td>ID61</td>
<td>Go Fuji</td>
<td>Nanoelectronics Research Inst., AIST, Tsukuba, Japan</td>
<td>Development of 4096-pixel superconducting-tunnel-junction array X-ray detectors for analytical sciences</td>
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<td>ID28</td>
<td>Y. Takeuchi</td>
<td>University of Tsukuba, Japan</td>
<td>Development of FD-SOI cryogenic amplifier for application to STJ readout in COBAND experiment</td>
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<td>ID51</td>
<td>S. Shitov</td>
<td>National University of Science and Technology MISiS, Moscow, Russia</td>
<td>Bias Analysis of Microwave-Readable RFTES Bolometer</td>
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<td>ID24</td>
<td>C. Pobes Aranda</td>
<td>ICMA Institute of Material Science of Aragon (CSIC-Universidad de Zaragoza), Zaragoza, Spain</td>
<td>Comparison of Ti/Au and Mo/Au TESs characterized under DC</td>
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<td>F. Liu</td>
<td>Key Laboratory of Patiice &amp; Radiation Imaging, Ministry of Education, Beijing, China</td>
<td>Evaluation of a 100MS/s 10b ADC at Cryogenic Temperature for Low-background Physics Experiments</td>
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<td>S. Cibella</td>
<td>Istituto di Fotonica e Nanotecnologie CNR, Roma, Italy</td>
<td>Bolometric detection with an NbN hot electron bolometer coupled to a split ring resonator (SRR)</td>
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<td>ID65</td>
<td>L. Parlato</td>
<td>Physics Dept, Univ Federico II, Napoli, Italy</td>
<td>Material aspects for Superconducting Nanowire Single-Photon Detectors</td>
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**Session WED 2 Low Temperature Devices for Classical and Quantum Information**

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<td>E. DeBenedictis</td>
<td>IEEE Council on Supercond.; IEEE Rebooting Computing; Sandia Nat. Labs, Albuquerque, New Mexico, USA</td>
<td>IEEE Superconducting and Quantum Information Activities</td>
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<td>ID41</td>
<td>T. Yamashita</td>
<td>Graduate School of Engineering, Nagoya University, Furocho, Chikusaku, Nagoya, Japan</td>
<td>Development of pi-shift superconducting flux qubits</td>
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<td>ID53</td>
<td>K. Delfanazari</td>
<td>Engineering Department, University of Cambridge, UK</td>
<td>Spin dependent conductance enhancement and Andreev magnetotransport in 2D Josephson junctions</td>
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<td>ID26</td>
<td>M. Cirillo</td>
<td>Dipartimento di Fisica and MINAS-Lab, Università di Roma “Tor Vergata”, Roma, Italy</td>
<td>Potential Escape Dynamics for Very Underdamped Josephson Junctions</td>
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<td>ID31</td>
<td>D. Crété</td>
<td>Unité Mixte de Physique, CNRS/THALES, Univ. Paris-Sud, Univ. Paris-Saclay, Palaiseau CEDEX, France</td>
<td>Integration density of ion-damaged barrier Josephson junction and circuits</td>
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Session WED 3 Special on Cryogenic Memories

ID62 INV  D. Mihailovic  Jozef Stefan Institute, Dept. of Complex Matter, Ljubljana, Slovenia
Ultrafast switching and the role of non-trivial defects in 1T-TaS2 CDW memory devices

ID49 INV  E. Strambini  NEST Istituto Nanosciente-CNR and Scuola Normale Superiore, Pisa, Italy
A Superconducting absolute spin valve, towards a new generation of magnetic RAM

ID63 INV  R. Caruso  CeSMA – Università degli Studi di Napoli Federico II, Napoli, Italy
Properties of low-dissipation ferromagnetic junctions for memory applications

ID59 INV  S. Pagano  Dipartimento di Fisica "E.R. Caianiello", Università di Salerno, Fisciano (SA), Italy
Magnetic Superconductive Nanowire Memories

ID67 INV  F. Miletto  CNR-SPIN Napoli, Italy
Emergent oxide memory devices

Session WED 4  2018 Nicholas Kurti Science Award Ceremony

M Cuthbert,  Oxford Instruments NanoScience
Introduction

P. Moll
Max Plank Institute for Chemical Physics of Solids, Dresden, Germany
2018 Winner
Development of novel micro-structuring techniques for quantum materials

Session WED 5  EXHIBITORS presentations

Departure to the Social Dinner

Social Dinner in Nerano
Thursday 13 morning

**Session THU1  Advanced Devices and Cryotechnologies for Quantum Information & Communication 1**

**ID73**  
M. Ter Brake  
*University of Twente, Faculty Science and Technology, Enschede, The Netherlands*  
(Micro?)Cooling of Low Temperature Electronics

**ID38**  
L. You  
*State Key Lab of Functional Materials for Informatics, SIMIT CAS, Shanghai, China*  
Superconducting nanowire single photon detectors for quantum information

**IDX1**  
F. Cataliotti  
*European Lab Nonlinear Spect LENS and Univ Florence, Florence, Italy*  
Quantum Flagship: the Italian perspective

**IDX2**  
A. Zavatta  
*CNR-INO, Florence, Italy*  
NATO Project on Secure Quantum Communications through submarine optical fibre link between Italy and Malta

**ID75**  
M. Grassi  
*Dipartimento di Ingegneria Industriale, Università degli Studi di Napoli Federico II, Napoli, Italy*  
CubeSat-based space platforms: emerging solutions for innovative space missions

**IDX5**  
N. Salza  
*Consorzio ALI, Napoli, Italy*  
Exhibition IRENE device for Small Mars Satellite Mission

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**Session THU2  Advanced Devices and Cryotechnologies for Quantum Information & Communication 2**

**ID22**  
A. Jones  
*Department of Physics, Lancaster University, Lancaster, UK*  
On-chip Magnetic Cooling of Electrons in Nanoelectronic Devices

**IDX4**  
N. Fabbri  
*CNR-INO, Florence, Italy*  
Spin qubit control, towards integrated quantum devices

**ID76**  
O. Mukhanov  
*HYPRES, Inc., Elmsford, NY, USA*  
SFQ-assisted Detectors - Integration of Josephson Junctions with Single Photon Detectors.

**ID34**  
A. Gaggero  
*Istituto di Fotonica e Nanotecnologie – CNR, Roma, Italy*  
Pulse position resolving SNSPD array integrated in photonic circuit

**ID19**  
S. Cherednichenko  
*Chalmers University of Technology, Gothenburg, Sweden*  
Low kinetic inductance nanowire single photon detectors made of thin MgB2 films

**ID25**  
P. Amari  
*Lab. de Physique et d'Etude des Matériaux, ESPCI Paris, PSL Research Univ, CNRS, Paris, France*  
High Temperature Superconducting nano-meanders made by ion irradiation

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Thursday 13 afternoon

**Session THU 3  Low Temperature Devices and New Physics**

- **ID57 INV**  F. Giazotto NEST Istituto Nanoscienze-CNR and Scuola Normale Superiore, Pisa, Italy
  All-metallic supercurrent and Josephson field-effect transistors

- **ID10 INV**  D. Perez de Lara IMDEA-Nanociencia, Madrid, Spain
  Tunable optoelectronic properties of transition metal dichalcogenides devices by biaxial strain engineering

- **ID17**  M. Thompson Dept. of Physics, Lancaster University, Lancaster, United Kingdom
  Tunable SQUIDs using graphene Josephson junctions

- **ID21**  N. Kolotinskii Lomonosov Moscow State University, Moscow, Russia
  Bi-SQUID designing tradeoff

- **ID69**  P. Solinas CNR-SPIN, Genova, Italy
  Proximity SQUID single photon detector via temperature-to-voltage conversion

- **ID20**  F. Ronetti Univ. di Genova and CNR-SPIN, Genova, Italy
  Crystallization of Levitons in the fractional quantum Hall regime

- **ID33**  M. Acciai Dipartimento di Fisica, Università di Genova, Genova, Italy
  Probing interactions via non-equilibrium momentum distribution and noise in integer quantum Hall systems

**Conference Closing Session**

- E. Silva IEEE Council of Superconductivity, Italy
- G. Pepe Conference Co-Chair

END
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**POSTER SESSION**

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<td>Low temperature passive electronics for optimizing the performance of superconducting nanowire single-photon detector</td>
<td>Chaolin Lv State Key Lab of Functional Materials for Informatics, SIMIT, CAS, Shanghai, China</td>
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<td>ID39</td>
<td>Noise studying of Microwave Kinetic Inductance Detectors</td>
<td>Z. Kazykenov Energetic Cosmos Laboratory, Nazarbayev University, Astana, Kazakhstan</td>
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<td>ID42</td>
<td>Data Acquisition System for Microwave Kinetic Inductance Detectors</td>
<td>M. Bekbalanova Energetic Cosmos Laboratory, Nazarbayev University, Astana, Kazakhstan</td>
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<td>K. Delfanazari Engineering Department, University of Cambridge, UK</td>
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<td>M. Shafiee Energetic Cosmos Laboratory, Nazarbayev University, Astana, Kazakhstan</td>
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<td>ID23</td>
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<td>N. Kolotinskiy Lomonosov Moscow State University, Department of Physics, Moscow, Russia</td>
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<td>A. Vettoliere CNR-ISASI, Pozzuoli, Italy</td>
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<td>M. Lisitsky CNR-SPIN Pozzuoli, Italy</td>
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<td>Combined Magnetic Field Sensor with Nanostructured Elements</td>
<td>L. Ichkitidze Nat. Res. Univ. of Electronic Technology, Zelenograd, Moscow, Russian Federation</td>
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<td>ID47</td>
<td>Superconducting Films Magnetic Field Concentrator with Nanosized Cuts</td>
<td>L. Ichkitidze Nat. Res. Univ. of Electronic Technology, Zelenograd, Moscow, Russian Federation</td>
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<td>ID48</td>
<td>Possible Registration of Magnetic Particles in Biological objects</td>
<td>L. Ichkitidze Nat. Res. Univ. of Electronic Technology, Zelenograd, Moscow, Russian Federation</td>
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<td>Critical Current in the Film from the Josephson Medium</td>
<td>L. Ichkitidze Nat. Res. Univ. of Electronic Technology, Zelenograd, Moscow, Russian Federation</td>
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<td>P. ’t Hart Technical Univ. Delft, Delft, The Netherlands</td>
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<td>A fast-cycling Ka-band noise measurement system</td>
<td>S. J. Melhuish Jodrell Bank Centre for Astrophysics, Univ. of Manchester, UK</td>
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<td>Anisotropic thermally activated dissipation in (Li$_{1-x}$Fe$_x$)OHFeSe superconducting single crystal</td>
<td>G. Y. Zhang Max Planck Institute for Solid State Research, Stuttgart, Germany</td>
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