

### Sunday 6 October

14:00-17:00 Excursion to Paestum Archeological Area

17:30-19:00 Registration

19:30 Welcome drink

### Monday 7 October

8:45-9:00 **Opening** E. Scheer, SUPERGATE Coordinator, University of Konstanz, Germany

*Chairs: M. Cuoco, CNR SPIN and F. Giazotto, CNR NANO*

9:00-9:40 J. Basset, University Paris Saclay, France *Gate-assisted phase fluctuations in all-metallic Josephson junctions*

9:40-10:20 Y. Pashkin, Lancaster University, UK *Field effect in superconductors: reality or delusion?*

10:20-10:50 G. De Simoni, CNR NEST, Italy *Gate-tunable superconducting devices for digital electronics*

Coffee Break

*Chairs: M. Cuoco, CNR SPIN and F. Giazotto, CNR NANO*

11:20- 12:00 A. Amoretti, University of Genova, Italy *Superconductors in strong electric fields: Quantum Electrodynamics meets superconductivity*

12:00-12:30 Y. Fukaya, Okayama University, Japan *Suppression of Josephson current by gating: role of spin-orbit coupling and low crystalline symmetry*

12:30-12:45 S. Annabi, Ecole Polytechnique, France *Quantum phase-transitions and non-locality in ultraclean carbon nanotube-based Josephson junctions*

12:45-13:00 C. Guarcello, University of Salerno, Italy *Anomalous Josephson effects in nanowire-based junctions*

Lunch Break

*Chairs: A. Di Bernardo, University of Salerno and W. Belzig, University of Konstanz*

14:30-15:10 K. Delfanzari, University of Glasgow, UK *Gate-voltage addressable superconducting-semiconducting hybrid circuits*

15:10-15:50 J. Cha, KRISS, South Korea *Coupling of Photons and Phonons in Superconducting Microwave Circuits*

Coffee Break

*Chairs: A. Di Bernardo, University of Salerno and W. Belzig, University of Konstanz*

16:15-16:30 J. Koch, University of Konstanz, Germany *Gate-controlled switching in non-centrosymmetric superconducting devices*

16:30-16:45 L. Kupas, Budapest University of Technology and Economics, Hungary *Switching dynamics of Al superconducting nanocircuits*

16:45-17:00 G. Trupiano, Scuola Normale Superiore, Italy *A superconducting microwave relaxation oscillator with quasiparticle injection*

17:00-17:30 D. Nikolic, University of Greifswald, Germany *Microscopic theory of gate-controlled surface depairing and anomalous in mesoscopic superconductors*

17:30-18:00 M. Berke, Budapest University of Technology and Economics, Hungary *Switching dynamics in Al/InAs nanowire-based gate-controlled superconducting transistor*

18:00 **SUPERGATE Project Meeting**

19:00 **Free time/discussion**

### Tuesday 8 October

*Chairs: A. Caviglia, University of Geneva and A. Vecchione, CNR SPIN*

9:00-9:40 J. Berger, University of Regensburg, Germany *Gate tunable supercurrent diode and anomalous Josephson effect*

9:40-10:20 C. Degen, ETH Zurich, Switzerland *Scanning nitrogen vacancy magnetometry and imaging of Meissner screening*

10:20-10:35 K. Knapp, ETH Zurich, Switzerland *Imaging of gate-controlled suppression of superconductivity by scanning nitrogen vacancy magnetometry*

10:35-10:50 H. Riechert, Ecole Polytechnique, France *Coherent control of a carbon nanotube-based gatemon qubit*

Coffee Break

*Chairs: A. Caviglia, University of Geneva and A. Vecchione, CNR SPIN*

<b>11:20- 12:00</b>	J. Meyer, University Grenoble Alpes, France	<i>Josephson tunneling at odd parity</i>
<b>12:00-12:30</b>	L. Ruf, University of Konstanz, Germany	<i>Gate controlled superconducting currents in Nb devices</i>
<b>12:30-12:45</b>	L. Marian, Université de Sherbrooke, Canada	<i>Observation of microwave Higgs modes in superconducting titanium nanostructures</i>
<b>12:45-13:00</b>	L. Andersson, Chalmers University, Sweden	<i>Real-time detection of quasiparticle tunneling events using a transmon qubit directly coupled to a waveguide</i>

Lunch Break

*Chairs: K. K. Berggren, MIT and M. Arzeo, SeeQc-EU*

<b>14:30-15:10</b>	D. Daghero, University of Torino, Italy	<i>Reversible tuning of superconductivity in ion-gated NbN thin films</i>
<b>15:10-15:50</b>	B. Trauzettel, University of Wuerzburg	<i>Dynamics of biased Josephson junctions</i>

Coffee Break

**16:15-18:00 Industry/EU Session**

*Chairs: K. K. Berggren, MIT and M. Arzeo, SeeQc-EU*

<b>16:15-16:30</b>	M. Ritter, European Commission DG CNECT	<i>The European Vision for Quantum Technologies</i>
<b>16:30-16:50</b>	C. Puglia, DSQM, Italy	<i>Exploitation of laboratory results through DSQM: A superconducting electronics spin-off</i>
<b>16:50-17:05</b>	M. Eichinger, Quantum Machines, Denmark	<i>Beyond qubits: what does it take to run Shor's algorithm on a fault tolerant computer?</i>
<b>17:05-17:20</b>	D. Salvoni, Photon Technology Italy	<i>Superconducting Single Photon Detectors for Quantum Information</i>
<b>17:20-17:35</b>	R. Acharya, IMEC, Belgium	<i>Superconducting Qubit Control with Ultra-Low-Power Cryo-CMOS Multiplexer at Millikelvin Temperatures</i>
<b>17:35-17:50</b>	M. Arzeo, SEE-QC EU, Italy	<i>SFQ electronics for chip-based quantum computing</i>
<b>17:50-18:00</b>	Closing remarks	

**19:30 Conference dinner Hotel Cerere Paestum**

### Wednesday 9 October

*Chairs: E. Scheer, University of Konstanz and P. Makk, Budapest University of Technology and Economics*

<b>9:00-9:40</b>	T. Jalabert, University of Grenoble, France	<i>Probing the dynamics of quasiparticles in a superconducting nanowire by scanning critical current microscopy</i>
<b>9:40-10:20</b>	K. K. Berggren, MIT, USA	<i>Superconducting Microstrip-Based Electronics: Revisiting the Cryotron</i>
<b>10:20-10:35</b>	L. Lakic, University of Copenhagen, Denmark	<i>Proximitized gate-controlled quantum dots in germanium</i>
<b>10:35-10:50</b>	D.C. Ohnmacht, University of Konstanz, Germany	<i>Full counting statistics of Yu-Shiba-Rusinov states</i>

Coffee Break

*Chairs: E. Scheer, University of Konstanz, and P. Makk, University of Budapest*

<b>11:20- 11:50</b>	J. van den Brink, IFW Leibniz Dresden, Germany	<i>Topological surface superconductivity in PtBi<sub>2</sub></i>
<b>11:50-12:20</b>	V. Buccheri, Chalmers University, Sweden	<i>Microwave characterization of gate controlled superconducting nanowires</i>
<b>12:20-12:35</b>	I. Aupias, University of Geneva, Switzerland	<i>Local and ultrafast dynamics of NbTiN superconducting nanowires</i>
<b>12:35-12:50</b>	A. Guarino, CNR SPIN, Italy	<i>Gate Induced Nanoscale Currents Distribution in Nb Dayem Bridges</i>
<b>12:50-13:05</b>	C. Autieri, MagTop Warsaw, Poland	<i>Dirac surface states and superconductivity in Nb- and Ta-based A15 compounds</i>

**13:05-13:15 Closing**

Lunch

**Afternoon Departure**