

Program

	Monday 7 March	Tuesday 8 March	Wednesday 9 March
8:45	Opening		
	Session 1: Topological SC	Session 5: Josephson junctions and SQUID	Session 8: Vortex Matter
9:00	Roditchev	Massarotti	Geshkenbein
9:25	Ast	Poggio	Gaggioli
9:50	Bauch	Koelle	Dobrovolskiy
10:15	Cayao	Giazotto	Menghini
10:40	Rogero	Nulens	Aragón
11:05	Coffee Break	Coffee Break	Coffee Break
	Session 2: Hybrid SC devices	Session 6: Pnictide SC	Session 9: Low dimen- sional SC
11:30	Zalom	Böhmer	Buzdin
11:55	Novotný	Leridon	Kalaboukhov
12:20	Hasanien	Chakraborty	Willa
12:45	Steffensen	Crisan	Fomin
13:10	Ye	Szabó	Ridderbos
13:35	Lunch	Lunch	Lunch
	Session 3: Coexisting phases in layer materials	Session 7: Other unconventional SC	Session 10: Josephson junctions and resonators
15:00	Anahory	Lang	Lado
15:25	Baldoví	Mishonov	Martínez-Pérez
15:50	Mañas	Farrar	Gómez
16:15	Calderón	Babaev	Closure
16:40	Giraldo-Gallo	Coffee Break	
17:05	Coffee Break	Free time	
17:40	Poster Session 1	Guided Walk Madrid (18:00-20:00)	
	19:00 Cocktail Dinner	20:00 Conference Dinner	

7 March 2022, from 8h45 to 13h00 CET

Zoom Session, day 1:

<https://uso2web.zoom.us/j/84376949987?pwd=Soo4cVV6eFN6bWZlWitBcoRaTmpCQTog>

ID: 843 7694 9987

Code: 595594

08h45-09h00: **Organizers**, opening.

Session 1: Topological superconductivity. Chair: Hermann Suderow

09h00-09h25: Dimitri Roditchev, ESPCI-Paris, “Resonant transmission of Josephson current in Nb-Bi₂Te_{2.3}Se_{0.7}-Nb junctions via Andreev bound states”.

09h25-09h50: Online. Christian Ast, MPI Stuttgart, “Supercurrent Reversal through Atomic Scale Yu-Shiba-Rusinov States”.

09h50-10h15: Online. Thilo Bauch, Chalmers University, “Circuit-QED probing of Majorana bound states in TI nano Josephson junctions”.

10h15-10h40: Jorge Cayao, Uppsala University, “Highly tunable exceptional points in non-hermitian Rashba superconductors”.

10h40-11h05: Celia Rogero, CFM-UPV/EHU, “Ferromagnetic insulator/superconductor interfaces as a platform for the superconducting-based nanodevices”.

11h05-11h30 BREAK

Session 2: Hybrid superconducting devices. Chair: Eduardo Lee

11h30-11h55: Peter Zalom, Czech Academy of Sciences, “Fast numerical renormalization group algorithms for multiterminal quantum dot devices”.

11h55-12h20: Tomás Novotný, Charles University, “Critical reassessment of YSR states in quantum impurities in contact with superconductors: effects of the quantum spin degree of freedom”.

12h20-12h45: Abdou Hasanien, Stefan Institute, “Self-assembled antiferromagnetic chains within a single layer of organic superconductor”.

12h45-13h10: Gorm Steffensen, Universidad Autónoma de Madrid, “Direct Transport between Superconducting Subgap States in a Double Quantum Dot”.

13h10-13h35: Online. Jianting Ye, University of Groningen, “Field Effect Control of Quantum Phases in 2D Materials”.

13h35-15h00 LUNCH BREAK

7 March 2022, from 15h00 to 17h05 CET

Session 3: Coexisting phases in layered materials. Chair: Dimitri Roditchev

15h00-15h25: Yonathan Anahory, Hebrew University, “Interior and edge magnetization in thin exfoliated CrGeTe₃ films”.

15h25-15h50: Jose Baldoví, University of Valencia, “Electronic structure and magnetism in 2D van der Waals materials”.

15h50-16h15: Samuel Mañas, University of Valencia, “Superconductivity in strongly correlated van der Waals heterostructures”.

16h15-16h40: Maria José Calderón, ICMN-CSIC, “Correlated states in ABC trilayer graphene/hBN moiré heterostructures”.

16h40-17h05: Online. Paula Giraldo-Gallo, University Los Andes, “Charge Density Wave Formation In The Quasi-1D Transition Metal Tetrachalcogenides”.

Session 4: Poster session.

8 March 2022, from 09h00 to 13h00 CET

Zoom Session, day 2:

<https://uso2web.zoom.us/j/81715064843?pwd=YVZCdHNGbGlnOEF2TURwc2NobTl2Zz09>

ID: 817 1506 4843

Code: 794028

Session 5: Josephson junctions and SQUID. Chair: Yonathan Anahory

09h00-09h25: Davide Massarotti, Naples University, “*Unconventional Josephson devices and circuits for quantum architectures*”.

09h25-09h50: Martino Poggio, Basel University, “*Magnetic, thermal, and topographic imaging with a nanometer-scale SQUID-on-lever scanning probe*”.

09h50-10h15: Dieter Koelle, Tübingen University, “*Niobium nanosquids patterned by Helium or Neon Focused ion beams*”.

10h15-10h40: Online. Francesco Giazotto, NEST-CNR Pisa, “*Quantum interference superconducting thermal nanovalve*”.

10h40-11h05: Lukas Nulens, University of Leuven, “*Metastable states and hidden phase slips in nanobridge SQUIDS*”.

11h05-11h30 BREAK

Session 6: Pnictide Superconductivity. Chair: Wolfgang Lang

11h30-11h55: Anna Böhmer, University Bochum, “*Local nematicity in iron-based superconductors induced by random strain fields*”.

11h55-12h20: Brigitte Leridon, ESPCI Paris, “*Granular metallicity and inhomogeneous superconductivity in thin films*”.

12h20-12h45: Debmalya Chakraborty, Uppsala University, “*Disorder-robust phase crystal in high-temperature superconductors from topology and strong correlations*”.

12h45-13h10: Adrian Crisan, National Institute of Materials, “*Multi-harmonic Susceptibility, DC Magnetization and Magnetic Relaxation Measurements in Iron-based Superconducting Single Crystal $\text{CaKFe}_4\text{As}_4$* ”.

13h10-13h35: Pavol Szabo, Slovak Academy of Sciences, “*Interface induced pair-breaking effects in strongly disordered superconducting MoN ultra-thin films*”.

13h35-15h00 LUNCH BREAK

8 March 2022, from 15h00 to 17h05 CET

Session 7: Other unconventional superconductors. Chair: Alexandre Buzdin

15h00-15h25: Wolfgang Lang, University of Vienna, “*Probing the anisotropic properties of YBCO with vicinal-grown films*”.

15h25-15h50: Todor Mishonov, Bulgarian Academy of Sciences, “*Hot and cold spots along the Fermi contour of High-T_c cuprates in the framework of Shubin-Kondo-Zener s-d exchange interaction*”.

15h50-16h15: Online. Liam Farrar, St Andrews, “*Superconducting Quantum Interference in Twisted van der Waals Heterostructures*”.

16h15-16h40: Online. Egor Babaev, KTH Royal Institute of Technology, “*Superconducting boundary states*”.

16h40-17h05 BREAK

9 March 2022, from 09h00 to 13h00 CET

Zoom Session, day 3:

<https://uso2web.zoom.us/j/87129237980?pwd=RHZkRG1FanBmZW81bDc3dVBHMjhzUT09>

ID: 871 2923 7980

Code: 553841

Session 8: Vortex Matter. Chair: Jose Luis Vicent

09h00-09h25: **Vadim Geshkenbein**, ETH Zurich, “*Flux creep and the Campbell response in type II superconductors*”.

09h25-09h50: **Filippo Gaggioli**, ETH Zurich, “*Strong pinning transition with arbitrary defect potentials*”.

09h50-10h15: **Dobrovolskiy Oleksandr**, University Vienna, “*Vortex jets in superconductors*”.

10h15-10h40: **Mariela Menghini**, IMDEA Nanoscience, “*Vortex dynamics and phase diagram modifications induced by magnetic nanostructures*”.

10h40-11h05: **Jazmín Aragón**, MPI Dresden, Bariloche, “*Disordered hyperuniform vortex matter with rhombic distortions in FeSe at low fields*”.

11h05-11h30 BREAK

Session 9: Low Dimensional Superconductivity. Chair: José Baldoví

11h30-11h55: **Alexandre I. Buzdin**, University of Bordeaux, “*Influence of a circular polarized radiation on the spontaneous current generation in superconducting ring*”.

11h55-12h20: **A. Kalaboukhov**, Goteborg University, “*Probing unconventional superconductivity in the $\text{LaAlO}_3/\text{SrTiO}_3$ interface using transport in nanowires*”.

12h20-12h45: **Roland Willa**, KIT, “*Inhomogeneous strain causes Time reversal symmetry breaking in Sr_2RuO_4* ”.

12h45-13h10: Online. **Vladimir Fomin**, Moldova State University, “*Topological transitions in ac/dc-driven open superconductor nanotubes*”.

13h10-13h35: Online. **Joost Ridderbos**, University of Twente, “*Induced superconductivity in Ge-Si core-shell nanowires*”.

13h35-15h00 LUNCH BREAK

8 March 2022, from 15h00 to 16h40 CET

Session 10: Josephson junctions and resonators. Chair: Dieter Koelle

15h00-15h25: Jose Lado, Aalto University, “*Topological and nodal superconductivity in van der Waals materials*”.

15h25-15h50: Maria José Martínez-Pérez, University of Zaragoza, “*Interfacing magnonic and superconducting quantum circuits*”.

15h50-16h15: Alicia Gómez, IMDEA Nanoscience, “*Superconducting Resonators for Space and Quantum Applications*”.