APRIL 27-30
Barcelona (Spain)
QUANTUM MATTER 2026
International Quantum Matter Conference

TENTATIVE PROGRAM (as of 28/04/2026)

P: Plenary / K: Keynote lecture / I: Invited Lecture / O: Oral contribution / T: Tutorials

Index

Sunday (26/04/2026)

TUTORIALS

13:30 – 14:30: **Marti Perarnau Llobet** (Universidad Autónoma de Barcelona, Spain) T
Quantum Metrology with Many-Body Systems
14:30 – 15:30: **Yasunobu Nakamura** (University of Tokyo, Japan) T
From macroscopic quantum coherence to superconducting quantum computing

15:30 – 16:00: *Coffee Break*

16:00 – 17:00: **Titus Mangham-Neupert** (University of Zurich, Switzerland) T
Berryology and Beyond: From Quantum Geometry to Topological Order
17:00 – 18:00: **Juan Francisco Sierra** (ICN2, Spain) T
Designing Spin Properties in 2D Hybrid Systems

Monday (27/04/2026)

08:00 – 08:45: Registration
08:45 – 09:00: Opening ceremony
09:00 – 09:40: **Bogdan Andrei Bernevig** (Princeton University, USA) P
The Alchemy of Today: 2D Engineered Materials
09:40 – 10:10: **Natalia Ares** (University of Oxford, UK) I
Fully machine learning-driven control and characterisation of quantum devices
10:10 – 10:25: **Pascal Degiovanni** (CNRS / ENS Lyon, France) O
Characterization of electronic entanglement via photo-assisted tunneling

10:25– 11:30: Coffee Break / Poster Session / Exhibition

11:30 – 12:00: **Alexandre Blais** (University of Sherbrooke, Canada) K
Limits and improvement of qubit readout in circuit QED
12:00 – 12:30: **William D. Oliver** (MIT, USA) K
Van der Waals Materials and Quantum Information Technologies
12:30 – 12:45: **Yi-Hsien Wu** (QuTech and Kavli Institute of Nanoscience, Delft University of Technology, The Netherlands) O
Weight-four parity checks with silicon spin qubits
12:45 – 13:00: **José Carlos Abadillo-Uriel** (CSIC, Spain) O
Spectrum engineering with spin-orbit states via magneto-tunneling

13:00 – 14:00*: Cocktail Lunch (offered by the organizers)*
14:00 – 14:30*: Poster Session I*

14:30 – 15:00: **Robert J. Schoelkopf** (Yale University, USA) K
Erasure Detection and Error Correction in Dual-Rail Superconducting Qubits
15:00 – 15:15: **Stefan Forstner** (The institute of Photonic Sciences (ICFO), Spain) O
Sensing the nanomechanical motion of an electron cluster via an electronic two-level system
15:15 – 15:30: **Kyrylo Gerashchenko** (LPENS, France) O
Probing the quantum motion of a macroscopic mechanical oscillator with a radio-frequency superconducting qubit
15:30 – 15:45: **Roger Tormo Queralt** (The institute of Photonic Sciences (ICFO), Spain) O
A nonlinear electromechanical system in the quantum regime

15:45 – 16:30: *Coffee Break / Poster Session / Exhibition*

16:30 – 17:00: **Preeti Chalsani** (Illinois EDC, USA) K
Illinois: The Global Quantum Hub
17:00 – 17:10: **Alberto Montanaro** (National Inter-University Consortium for Telecommunications (CNIT), Italy) O
PhotonHub PHACTORY: Accelerating Quantum Hardware Integration
17:10 – 17:20: **Ricardo Díez Muiño** (DIPC & Ikerbasque, Spain) O
IKUR / BasQ: From Quantum Science to Impact in the Basque Country
17:20 – 17:30: **Veronica Fernandez** (ITEFI-CSIC, Spain) O
QuARC-CSIC: Optical Ground Stations as Key Infrastructures for Space-Ground Quantum Communications
17:30 – 17:40: **Francesco Binanti** (CEA/UGA, France) O
Maison du quantique Alpes and Hub quantique, innovation approaches of hybrid quantum computing for end users
17:40 – 17:50: **Alba Cervera** (Barcelona Supercomputing Center, Spain) O
Quantum Spain: boosting the Spanish quantum computing ecosystem
17:50 – 18:10: **Juan Artes Vivancos** (European Research Council, Belgium) I
The European Research Council funding schemes: Novelties in 2026 and tips and tricks to maximize your chances
18:10 – 18:30: **Stefan Hildebrandt** (Wiley-VCH GmbH, Germany) I
Leading with the Advanced Portfolio

PITCHING EVENT (//session)

14:30 – 14:45: **Artem Nikitin** (Quantum Logic, The Netherlands)
14:45 – 15:00: **Jose Hugo Garcia Aguilar** (Apeiron Intelligence, Spain)
15:00 – 15:15: **Gianvito Chiarella** (QMunicate, Germany)
15:15 – 15:30: **Tomás Rojas Castiglione** (Balthazar, The Netherlands)
15:30 – 15:45: **Elisabeth Ortega** (Qilimanjaro, Spain)

15:45 – 16:30: Coffee Break / Poster Session / Exhibition

16:30 – 16:45: **Pau Jorba** (Kiutra, Germany)
16:45 – 17:00: **Samuele Grandi** (Arc Quantum Technologies, Spain)
17:00 – 17:15: **Moss Nenbangkaeo** (Pixel Photonics, Germany)
17:15 – 17:30: **Dr. Ingrid Romijn** (Q*Bird, The Netherlands)

Tuesday (28/04/2026)

// Workshop 01: Quantum materials: growth, characterization & device fabrication

09:00 – 09:30: **Eduardo Lee** (IFIMAC / UAM, Spain) I
A gate-tunable transmon in the ultrastrong coupling regime
09:30 – 09:45: **Simone Assali** (CEA Grenoble, France) O
Sn-enabled tunable hole spin group IV heterostructures
09:45 – 10:00: **Feike van Veen** (University of Twente, The Netherlands) O
Experimental Signatures of Gate-Tuneable One-Dimensional Edge Channels in Bi2Se3 Josephson Junctions
10:00 – 10:15: **Gabriele De Luca** (ICMAB-CSIC, Spain) O
Epitaxial Pyrochlore Oxide Thin Films as a Platform for Emergent Magnon Transport Phenomena
10:15 – 10:30: **Kingshuk Bandopadhyay** (Ensemble3 Sp. z o. o., Poland) O
Engineered Materials Platforms for Quantum and Advanced Photonic Technologies

10:30– 11:00: Coffee Break / Poster Session / Exhibition

11:00 – 11:30: **Samuel Mañas-Valero** (TU Delft, The Netherlands) I
Tuning two-dimensional magnets with a twist
11:30 – 11:45: **Daniel Jetter** (Universität Basel, Switzerland) O
SQUID-on-lever scanning probe for magnetic imaging with sub-100-nm spatial resolution
11:45 – 12:00: **Yesim Mogulkoc** (Ankara University, Turkey) O
Magnetic properties of two-dimensional binary and Janus Cr2XYSe2 (X,Y=F,Cl,Br,I) compounds
12:00 – 12:15: **Llorenç Serra** (University of the Balearic Islands, Spain) O
Control of edge modes in magnetic topological insulators with normal and superconducting gates
12:15 – 12:30: **Carlo Pepe** (Instituto de Microelectrónica de Barcelona CNM-CSIC, Spain) O
Ion irradiation for engineering superconducting properties in thin films
12:30 – 12:45: **Satoshi Sasaki** (University of Leeds, UK) O
Enhanced Rashba Effect Observed in Capped Topological Insulator Thin Films Grown by MBE
12:45 – 13:00: **Valentyn Volobuiev** (International Research Centre MagTop, Institute of Physics, Polish Academy of Sciences, Poland) O
Epitaxial Phase Control and Defects in MnTe Thin Films
13:00 – 13:15: **Konstantinos Lagoudakis** (University of Strathclyde, UK) O
From Deterministic Positioning to Universal Control: Spin Pumping and Trion Coherence in Pyramidal Quantum Dots

13:15 – 14:30*: Lunch Break*

Plenary Session

14:30 – 15:10*:* **Immanuel Bloch** (Max-Planck Institute of Quantum Optics, Germany) P
Quantum Simulation and Quantum Computing with Fermions

// Workshop 02: Quantum matter: theory & simulations

09:00 – 09:30: **Monika Aidelsburger** (Ludwig-Maximilians-Universität München, Germany) I
Quantum simulation – Engineering & understanding quantum systems atom-by-atom
09:30 – 09:45: **Enrique Munoz** (Pontificia Universidad Católica de Chile, Chile) O
Superconductivity in multi-Weyl semimetals: Conditions for the coexistence of topological and conventional phases
09:45 – 10:00: **Marta García Olmos** (Universidad de Salamanca, Spain) O
Proximity-induced superconductivity in semi-Dirac materials
10:00 – 10:15: **Yuriko Baba** (Instituto de Estructura de la Materia, CSIC, Spain) O
Emergent topology by Landau level mixing in quantum Hall-superconductor nanostructures
10:15 – 10:30: **Adamantia Kosma** (Forschungszentrum Jülich, Germany) O
Ab-initio simulations of transition metal-superconductor interfaces
10:30– 11:00: Coffee Break / Poster Session / Exhibition

11:00 – 11:30: **Siddharth Ashok Parameswaran** (University of Oxford, UK) I
M is for Monte Carlo: Sign-Free Studies of M-Point Moiré Materials
11:30 – 11:45: **Federico Centrone** (ICFO, Spain) O
Metrological bounds on scrambling dynamics in many-body quantum critical systems
11:45 – 12:00: **Charles Creffield** (Universidad Complutense, Spain) O
Reaching SYK physics by shaking the Hubbard model
12:00 – 12:15: **Engin Durgun** (Bilkent University UNAM, Turkey) O
Symmetry-driven transitions between flat bands and Dirac cones in bilayer kagome lattices
12:15 – 12:30: **Jessica Oliveira de Almeida** (University of Stuttgart, Germany) O
Probing chirality with high-harmonic generation
12:30 – 13:00: **Inès Safi** (CNRS / Paris Saclay University, France) I
Robust probes of the anyonic braiding phase

13:00 – 14:30*: Lunch Break*

Plenary Session

14:30 – 15:10*:* **Immanuel Bloch** (Max-Planck Institute of Quantum Optics, Germany) P
Quantum Simulation and Quantum Computing with Fermions

//Workshop 02: Quantum matter: theory & simulations

15:15 – 15:45: **Alessandro Principi** (The University of Manchester, UK) I
Revisiting the valley (and orbital) Hall effect
15:45 – 16:00: **Alexandre Feller** (Université de Lille, France) O
From Fermionic Mode Entanglement to Effective Flying Qubits
16:00 – 16:15: **Arnob Ghosh** (Uppsala University, Sweden) O
Topological state transfer and maximal entanglement between distant qubits using a minimal quasicrystal pump
16:15 – 16:30: **Andrea Maiani** (Nordita, Sweden) O
Optical and transport anisotropies in spin-textured altermagnets
16:30 – 16:45: **Aleksandr Latyshev** (LPS CNRS, France) O
Quantum Coulomb drag mediated by cotunneling of fluxons and Cooper pairs

16:45 – 17:30: *Coffee Break / Poster Session / Exhibition*

// Workshop 03: Quantum information

09:00 – 09:30: **Jacob Taylor** (QuICS, USA) I
Exploring Fundamental Physics with Quantum Information
09:30 – 09:45: **Elisa Bossard** (LPMMC, France) O
Unavoidable entropy production in fault-tolerant quantum error correction
09:45 – 10:00: **Ishwari Patil** (Vishwakarma Institute of Technology, Pune, India) O
CryptexQ - A Quantum-Resilient End-to-End Encrypted Messaging Framework
10:00 – 10:15: **Mao Tian Tan** (University of Ljubljana, Slovenia) O
Logarithmic Operator Entanglement Growth in Non-Integrable Quantum Circuits
10:15 – 10:30: **Tomasz Szoldra** (University of Hamburg, Germany) O
Scalable Preparation of Matrix Product States with Sequential and Brick Wall Quantum Circuits

10:30 – 11:00: Coffee Break / Poster Session / Exhibition

11:00 – 11:15: **Some Sankar Bhattacharya** (Universitat Autònoma de Barcelona, Spain) O
Robust certification of high-dimensional quantum communication
11:15 – 11:30: **Jose Luis Rosales** (Universidad Politécnica de Madrid, Spain) O
Small-world Entanglement Landscapes Yield O (N LogN) QKD Scaling
11:30 – 11:45: **Zain Saleem** (Argonne National Laboratory, USA) O
Quantum Fisher Information and the curvature of entanglement
11:45 – 12:00: **Ayaka Usui** (Universitat Autònoma de Barcelona, Spain) O
Entanglement-assisted Hamiltonian dynamics learning
12:00 – 12:15: **Matteo Seclì** (EPFL, Switzerland) O
The True Cost of Factoring: Magic and Number-Theoretic Complexity in Shor's Algorithm
12:15 – 12:30: **Xi Chen** (The Material Science Institute of Madrid, ICMM-CSIC, Spain) O
Symmetry-Aware Counterdiabatic Quantum Algorithm for Ground-State Energy Estimation in Quantum Chemistry
12:30 – 12:45: **Giuseppe Vitagliano** (TU Wien, Austria) O
Characterizing entanglement dimensionality with covariances and randomized measurements
12:45 – 13:15: **Suguru Endo** (NTT R&D, Japan) I
Exploiting symmetries in bosonic codes for quantum error mitigation and correction

13:15 – 14:30*: Lunch Break*

Plenary Session

14:30 – 15:10*:* **Immanuel Bloch** (Max-Planck Institute of Quantum Optics, Germany) P
Quantum Simulation and Quantum Computing with Fermions

// Workshop 04: Quantum Computing

09:00 – 09:15: **Victor Champain** (ICFO, Spain) O
A heat-resilient hole spin qubit in silicon
09:15 – 09:30: **Leonardo Ratini** (University of Parma, Italy) O
Understanding decoherence in molecular spin qudits
09:30 – 09:45: **Teemu Ojanen** (Tampere University, Finland) O
High-dimensional Bell violation up to 10 qubits on superconducting processors
09:45 – 10:00: **Joan Agustí Bruzón** (Institute of Fundamental Physics IFF-CSIC, Spain) O
Entangling remote qubits through a two-mode squeezed reservoir
10:00 – 10:30: **Nadia Haider** (TU Delft, The Netherlands) I
The Quiet Leap Forward: Qubits with 0-π Protection

10:30– 11:00: Coffee Break / Poster Session / Exhibition

11:00 – 11:30: **Zaki Leghtas** (Ecole Normale Supérieure, France) I
Experimental realization of a cos(2ϕ) transmon qubit
11:30 – 11:45: **Luciano Pereira** (ICFO, Spain) O
Longitudinal qubit readout from Jaynes-Cummings coupling and strong drive
11:45 – 12:00: **Alan C. Santos** (IFF-CSIC, Spain) O
From Decoherence-Free Qubits with Giant Molecules in Waveguide QED
12:00 – 12:15: **Aviv Glezer Moshe** (Planckian, Italy) O
Experimental observation of dynamical blockade between transmon qubits via ZZ interaction engineering
12:15 – 12:45: **Pasquale Scarlino** (EPFL, Switzerland) I
Hybrid QD-Resonator Circuit QED: From Strong Light-Matter Interaction to Microwave Photon Detection

12:45 – 14:30*: Lunch Break*

Plenary Session

14:30 – 15:10*:* **Immanuel Bloch** (Max-Planck Institute of Quantum Optics, Germany) P
Quantum Simulation and Quantum Computing with Fermions

Workshop 04: Quantum Computing

15:15 – 15:30: **Oliver N Gallego Lacey** (CEA Grenoble, France) O
Anisotropic triplet Relaxation for Ge/SiGe Spin Qubits in the Pauli spin blockade regime
15:30 – 15:45: **Mathieu Féchant** (Karlsruhe Institute of Technology, Germany) O
Offset charge dependence Measurement Induced State Transitions and TLS lifetime signatures
15:45 – 16:15: **Martin Weides** (University of Glasgow, UK) I
Towards Realistic Multilayer Quantum Circuits: Integrating Simulation with Experimental Data

16:15 – 17:30: *Coffee Break / Poster Session / Exhibition*

// Workshop 05: Quantum sensing

09:00 – 09:15: **Rodrigo Grande de Diego** (Instituto de Física Fundamental, Spain) O
Squeezed Cooling and Squeezed Lasing via Cavity-Assisted Raman Transitions
09:15 – 09:30: **Linus Aliani** (University of Würzburg, Germany) O
Cooling of electrons via superconducting tunnel junctions and their arrays exhibiting nodal lines
09:30 – 09:45: **Nicolas Fabre** (Telecom Paris, Institut Polytechnique de Paris, France) O
Kramer-Kronig detection in the quantum regime
09:45 – 10:00: **Simone Felicetti** (Italian National Research Council, Italy) O
Critical Parametric Quantum Sensing
10:00 – 10:15: **Seunghyun Park** (Harvard University, USA) O
Quantum sensing of supercurrent and phase transition in superconducting device
10:15 – 10:30: **André Pereira** (IFIMUP - Porto University, Portugal) O
Quantum Sensing with Spin–Orbit-Coupled Surface States in Chalcogenides

10:30– 11:00: Coffee Break / Poster Session / Exhibition

11:00 – 11:30: **Marco G. Genoni** (Universita Degli Studi Di Milano, Italy) I
Quantum sensing enhancement in monitored dissipative time crystals
11:30 – 11:45: **Fabien Lafont** (The Weizmann institute of science, Israel) O
Unravelling the emergence of quantum jumps in a monitored qubit
11:45 – 12:00: **Carlos Sánchez Muñoz** (Institute of Fundamental Physics (IFF-CSIC), Spain) O
On-demand single-photon source over the terahertz regime
12:00 – 12:15: **Prasoon Saurabh** (QuMorpheus Initiative/Independent, Nepal) O
Engineering Non-Hermitian Singularities in Photonic Lattices for Robust Interaction Moduli
12:15 – 12:30: **Giacomo Rebora** (CNRS - ENS Lyon, France) O
Probing collision-induced electronic entanglement in ballistic conductors
12:30 – 12:45: **Cristina Mier Gonzalez** (CIC nanoGUNE-BRTA, Spain) O
Nuclear magnetic resonance on a single atom with a local probe
12:45 – 13:00: **Dylan Lewis** (Imperial College London, UK) O
Quantum Optimal Control with Geodesic Pulse Engineering
13:00 – 13:15: **Federico Cerisola** (University of Exeter, UK) O
Coupling a single spin to the motion of a carbon nanotube

13:15 – 14:30*: Lunch Break*

Plenary Session

14:30 – 15:10*:* **Immanuel Bloch** (Max-Planck Institute of Quantum Optics, Germany) P
Quantum Simulation and Quantum Computing with Fermions

// Workshop 6: Topological quantum matter: electronics, spintronics, photonics & phononics

09:00 – 09:15: **Prince Sharma** (National Institute for Materials Science, Japan) O
Ultrafast Carrier Dynamics Revealing a Dimensional Crossover in Ni3In2S2-xSex Topological Semimetals
09:15 – 09:30: **Maximilian Hofer** (University of Würzburg, Germany) O
Self-Consistent Electronic Modeling of Gated Narrow-Gap Topological Insulators
09:30 – 09:45: **Javier Osca Cotarelo** (University of the Balearic Islands, Spain) O
Interference of chiral Majorana modes in Magnetic Topological Insulators with electrostatic gating.
09:45 – 10:00: **Sofie Köllling** (ETH Zurich, Switzerland) O
Current-induced nuclear spin polarization in topological insulators at high bias currents
10:00 – 10:30: **Joon Young Park** (Sungkyunkwan University / IBS-2DQH, South Korea) I
The "Quantum Pokéball": Even–Odd Josephson Diode and Vortex Fusion on a Topological Insulator

10:30– 11:00: Coffee Break / Poster Session / Exhibition

11:00 – 11:30: **Albert Schliesser** (Copenhagen University, Denmark) I
Quantum and topological phononics with ultrasound waves on a chip
11:30 – 11:45: **Aksel Kobialka** (Uppsala University, Sweden) O
Topology and energy dependence of Majorana bound states in a cavity
11:45 – 12:00: **Moritz Siebert** (University of Würzburg, Germany) O
Topological phase diagram of mercury cadmium telluride quantum wells
12:00 – 12:15: **Jorge Martínez Romeral** (Catalan Institute of nanoscience and nanotechnology (ICN2), Spain) O
Real-Space Approach to Light-Induced Hall Transport in Disordered Materials
12:15 – 12:30: **Aybey Mogulkoc** (Ankara University, Turkey) O
Topological Spin Textures in SnC/MnSeX (X=Se, Te) Heterostructures Enabled by Interface Engineering
12:30 – 13:00: **Miguel A. Cazalilla** (Donostia International Physics Center (DIPC), Spain) I
Electron Correlation Effects in Superconducting Qubits

13:00 – 14:30*: Lunch Break*

Plenary Session

14:30 – 15:10*:* **Immanuel Bloch** (Max-Planck Institute of Quantum Optics, Germany) P
Quantum Simulation and Quantum Computing with Fermions

Workshop 6: Topological quantum matter: electronics, spintronics, photonics & phononics

15:15 – 15:45: **Klaus Ensslin** (ETH Zürich, Switzerland) I
Graphene Quantum Devices
15:45 – 16:00: **Riccardo Bertini** (ICFO - The Institute of Photonic Sciences, Spain) O
Optoelectronic Probes of Out-of-Equilibrium Criticalities in Tunable Graphene Moiré Superlattices
16:00 – 16:15: **Raul Perea-Causin** (Stockholm University, Sweden) O
Moiré fractional Chern insulators from topological bosons and trivial fermions
16:15 – 16:30: **Houssam EL Mrabet Haje** (Delft University of Technology: Technische Universiteit Delft, The Netherlands) O
CuInP2S6: a 2D Ferrielectric with giant UV birefringence and anomalous refractive index modulation
16:30 – 16:45: **Celia Gonzalez Sanchez** (Universidad Autonoma de Madrid, Spain) O
Signatures of edge states in NbSe2/NiPS3/NbSe2 antiferromagnetic Josephson junctions

16:45 – 17:30: *Coffee Break / Poster Session / Exhibition*

// Workshop 07: Quantum simulation

15:15 – 15:45: **Leticia Tarruell** (ICFO, Spain) I
Spin-resolved microscopy of strontium SU(N) Fermi-Hubbard systems
15:45 – 16:00: **Anant Kale** (Harvard University, USA) O
Pseudogap and nematicity in a Fermi-Hubbard quantum simulator
16:00 – 16:15: **Eric Switzer** (National Institute of Standards and Technology, USA) O
Exploring Long-Range Correlated Fermi-Hubbard Models on IBM Heron v2 using the SqDRIFT Algorithm
16:15 – 16:30: **Blazej Jaworowski** (ICFO, Spain) O
Laughlin-like states of few atomic excitations in small subwavelength atom arrays

16:30 – 17:00: *Coffee Break / Poster Session / Exhibition*

17:00 – 17:15: **Oguz Gulseren** (Bilkent University, Turkey) O
Thermoelectric Properties of 2D Materials exhibiting a Mexican-Hat band Structure: An Analytical and Computational Investigation
17:15 – 17:30: **Todor Krasimirov** (Barcelona Supercomputing Center, Spain) O
Hardware-inspired Continuous Variable Quantum Optical Neural Networks
17:30 – 17:45: **Benedikt Fauseweh** (TU Dortmund University, Germany) O
Emergent Coupling Based Ansatz evaluated on a Superconducting Quantum Processor
17:45 – 18:00: **Angelo Valli** (Budapest University of Technology and Economics, Hungary) O
Universal spin transfer dynamics in infinite temperature quantum spin chains
18:00 – 18:15: **Aleix Bou Comas** (CSIC - IFF - QUINFOG, Spain) O
Measuring Temporal entropies in experiments
18:15 – 18:30: **Lorenzo Maffi** (University of Padua, Italy) O
Vortex Dynamics in Strongly Interacting Superfluids
18:30 – 18:45: **Yue Ban** (Instituto de Ciencia de Materiales de Madrid (ICMM-CSIC), Spain) O
Kicked-Ising quantum battery

INDUSTRIAL FORUM

09:00 – 09:15: **Reza Hajitashakkori Kenari** (Qphox B.V., The Netherlands) O
Optical links for control and readout of superconducting qubits: toward scalable, low heat load architectures
09:15 – 09:30: **Mireia Tena Zuazolacigorraga** (Qilimanjaro Quantum Tech, Spain) O
Fluxonium Qubits in a Flip-Chip Architecture for Analog Quantum Computing
09:30 – 09:45: **Sergi Julià-Farré** (PASQAL, France) O
One-to-one quantum simulation of the low-dimensional frustrated quantum magnet TmMgGaO4 with 256 qubits
09:45 – 10:00: **Lydia Baril** (C12 Quantum Electronics, France) O
Scaling spin qubits for practical and affordable quantum computing
10:00 – 10:30: **Ivano Tavernelli** (IBM Research, Switzerland) K
Quantum computing algorithms and applications in the natural sciences

10:30 – 11:00: Coffee Break / Poster Session / Exhibition

11:00 – 11:30: **Álvaro Nodar** (Global DataQuantum, Spain) K
Quantum Computing in the Financial Industry: Demonstrating Industrial Impact on Real NISQ Hardware
11:30 – 11:50: **Roman Orus** (Multiverse Computing & DIPC, Spain) I
Towards “Intelligent" Quantum Computers
11:50 – 12:05: **Ingrid Romijn** (QBird, The Netherlands) O
Scaling quantum secure networks with QBird’s MDI-QKD
12:05 – 12:20: **Antonio Marquez Romero** (Fujitsu Research of Europe, Spain) O
Study of nuclear magnetic resonance spectra with the multi-modal multi-level quantum complex exponential least squares algorithm
12:20 – 12:35: **Hannu Reittu** (VTT Technical Research Centre of Finland, Finland) O
Rigorous analysis of QAOA for graph clustering
12:35 – 12:50: **Augustine Kshetrimayum** (Multiverse Computing, Spain) O
Quantum Advantage: a Tensor Network Perspective
12:50 – 13:05: **Prabhat Anand** (Tata Consultancy Services Ltd, India) O
QDsiM: a simulation toolkit for optimizing realistic quantum diamond magnetometry experimentation

13:05 – 14:30*: Lunch Break*

Plenary Session
14:30 – 15:10*:* **Immanuel Bloch** (Max-Planck Institute of Quantum Optics, Germany) P
Quantum Simulation and Quantum Computing with Fermions

INDUSTRIAL FORUM

15:15 – 15:45: **Piotr Kot** (Qblox BV, The Netherlands) K
Scalable Control Stack Architecture for fault-tolerant quantum computing
15:45 – 16:15: **Philip Dolan** (NU Quantum, UK) K
Entanglement Networks for Datacentre Scale Quantum Computing
16:15 – 16:45: **Claudius Riek** (Zurich Instruments, Switzerland) K
Truly scalable quantum control for logical qubits

16:45 – 17:30: *Coffee Break / Poster Session / Exhibition*

17:30 – 18:00: **Pedram Roushan** (Google Inc., USA) K
Novel quantum dynamics with superconducting qubits
18:00 – 18:15: **Maria El Abbassi** (Chiralnano, Switzerland) O
Robotic assembly of high-quality Carbon Nanotubes Quantum dot devices
18:15 – 18:30: **Joana Fraxanet Morales** (IBM Quantum, Spain) O
Real-Time Dynamics of Confining Strings on a Superconducting Quantum Simulator

Wednesday (29/04/2026)

09:00 – 09:30: **Susanne Stemmer** (UC Santa Barbara, USA) K
New Phases in Thin Films of Topological Matter
09:30 – 09:45: **Rubén Seoane Souto** (Spanish Research Council (CSIC), Spain) O
Characterization of low-energy states in Kitaev chains
09:45 – 10:15: **Gwendal Feve** (ENS, France) I
Time-domain braiding of anyons

10:15– 11:00: Coffee Break / Poster Session / Exhibition

11:00 – 11:40: **Seigo Tarucha** (RIKEN, Japan) P
Advances in Silicon-based Quantum Computing
11:40 – 11:55: **Jeremie Viennot** (CNRS, France) O
From optimal microwave-acoustic transduction to ultra-strong coupling in quantum acoustics
11:55 – 12:10: **Simone Gasparinetti** (Chalmers University of Technology, Sweden) O
Always-on, highly efficient microwave photodetector based on a superconducting artificial molecule
12:10 – 12:25: **Marko Kuzmanović** (Aalto University, Finland) O
Quantum-optimal-control methods for amplitude and detuning robust operations on cQED systems

12:25 – 13:30*: Cocktail Lunch (offered by the organizers)*
13:30 – 14:00: Poster Session 2

14:00 – 16:00: PhD student Parallel sessions (1, 2, 3 & 4)
14:00 – 16:00: Industrial Forum

16:00– 16:30: Coffee Break / Poster Session / Exhibition

16:30 – 18:30*: Industrial Forum*

// PhD Student I – Quantum Computing, Software & AI

14:00 – 14:10: **Héctor Briongos-Merino** (University of Barcelona, Spain) O
Engineering Persistent and Entangled Current States in Dipolar Atomtronic Circuits
14:10 – 14:20: **Sercan Deve** (Delft University of Technology, The Netherlands) O
Fundamental limit on parametric readout of a flux-tunable transmon qubit
14:20 – 14:30: **Ariadna Gómez del Pulgar Martínez** (IFAE, Spain) O
NitrAl: a new material for superconducting qubit applications
14:30 – 14:40: **Lucky Kapoor** (Institute of Science and Technology Austria, Austria) O
Fast flux control of noise-biased fluxonium qubits
14:40 – 14:50: **Amon Kasper** (National University of Singapore, Singapore) O
Engineering a bosonic CZ gate between two superconducting cavities
14:50 – 15:00: **Javier Lalueza-Puertolas** (UAB, Spain) O
Deterministic GKP state generation in programmable photonic cavities
15:00 – 15:10: **Tara Murphy** (University of Cambridge, Quantum Motion, UK) O
Multiplexed characterisation and automatic tune-up of 45 SEB + DQD unit cells in Si MOS for device process control
15:10 – 15:20: **Léo Noirot** (CEA, France) O
A Silicon hole spin qubit coupled to nuclear spins
15:20 – 15:30: **Ana Sempere-Sanchis** (CEA, France) O
Hole spin manipulation by hopping in the presence of disorder
15:30 – 15:40: **Federico Poggiali** (TU Delft, The Netherlands) O
A long lived Spin Qubit Pair in Germanium with Matching g-tensors
15:40 – 15:50: **Christian Ventura Meinersen** (QuTech, Delft University of Technology, Belgium) O
Multi-level spectral navigation with geometric diabatic-adiabatic control
15:50 – 16:00: **Raquel Garcia Belles** (ETH Zurich, Switzerland) O
TLS loss in multimode mechanical resonators coupled to a superconducting circuit

// PhD Student II – Quantum Materials, Topology & Theory

14:00 – 14:10: **Lumen Eek** (Utrecht University, The Netherlands) O
Realization of a one-dimensional topological insulator in ultrathin germanene nanoribbons
14:10 – 14:20: **Sunil Gangwar** (Indian Institute of Technology Mandi, India) O
Anomalous Transport Response in Nodal Line Semimetal Mn3ZnC
14:20 – 14:30: **Rebecca Hoffmann** (ICFO - The Institute of Photonic Sciences, Spain) O
Ballistic transport in electrostatic graphene superlattices
14:30 – 14:40: **Alban Joseph** (University of Glasgow, UK) O
Time-Domain Dynamics of Level Attraction in Remotely Coupled Cavity-Magnon Systems
14:40 – 14:50: **Mafalda Moreira** (IFIMUP - Porto University, Portugal) O
Electron interactions in flexible and disordered topological insulator systems based on Bi2Te3
14:50 – 15:00: **Daniel Michel Pino Gonzalez** (CSIC, Spain) O
Theory of superconducting proximity effect in hole-based hybrid semiconductor-superconductor devices
15:00 – 15:10: **Hector Roche** (DIPC, Spain) O
Family of Aperiodic Tilings with Tunable Quantum Geometric Tensor
15:10 – 15:20: **Sushmita Saha** (Indian Institute of Technology Indore, India) O
Unveiling the chiral states in multi-Weyl semimetals via theoretical investigation of magneto-optical spectroscopy and negative magneto-resistance
15:20 – 15:30: **Sergio Jose Salvía-Fernandez** (ICFO, Spain) O
Polarization resolved THz photovoltage response in BSCCO-2212 thin flakes
15:30 – 15:40: **Mathieu Turmel** (CEA, UGA, France) O
Tailoring Novel Group IV Quantum Material Heterostructures
15:40 – 15:50: **Nicolas Rotaru** (Polytechnique Montréal, Canada) O
Germanium Planar Quantum Structures: Isotopic Purification and Optical Activity
15:50 – 16:00: **Manavendra Pratap Singh** (IISc Bangalore, India) O
Anisotropic In-Plane Thermal Conductivity of Freestanding ReS2

// PhD Student III – Quantum Devices & Sensing

14:00 – 14:10: **Marta Cagetti** (ICFO, Spain) O
High-Fidelity Charge Readout and Low-Backaction Nanomechanical Measurement in Suspended Carbon Nanotubes
14:10 – 14:20: **Kenji Capannelli** (QuTech, The Netherlands) O
Coherent control and interactions of spin and valley qubits in Si/SiGe quantum dots
14:20 – 14:30: **Dario Denora** (QuTech - TU Delft, The Netherlands) O
A Vertical Spin Qubits Array in Bilayer Ge/SiGe
14:30 – 14:40: **Benedek Gaal** (EPFL, Switzerland) O
Eigenmode imaging of compact superconducting resonator arrays
14:40 – 14:50: **Sébastien Granel** (UGA-CEA, France) O
High quality hybrid spin cQED 3D architecture
14:50 – 15:00: **Johannes Höfer** (CNRS Inst. Néel, Univ. Grenoble Alpes, France) O
Local dissipation in a quantum dot junction
15:00 – 15:10: **Wiktor Krokosz** (University of Warsaw, Poland) O
Room Temperature Rubidium Atom Spectroscopy of a Terahertz Frequency Comb
15:10 – 15:20: **Andrea Pegoretti** (Fondazione Bruno Kessler, Italy) O
Engineering Diamond Membranes for Color Center-Based Thermometry
15:20 – 15:30: **Shah Jee Rahman** (Material Physics Center, Spain) O
Optically levitated particles and controlling the Center-of-Mass motion by structured wavefronts
15:30 – 15:40: **Elisabet Roda Salichs** (Universitat Autònoma de Barcelona, Spain) O
Sequential analysis in a continuous spin-noise quantum sensor
15:40 – 15:50: **Ioannis Samaras** (University of Strathclyde, UK) O
Complete Coherent Control of Spin Qubits in Self-Assembled InGaAs Quantum Dots under Oblique Magnetic Fields
15:50 – 16:00: **Edmondo Valvo** (QuTech, TU Delft, The Netherlands) O
Electrically Tuneable Variability in Germanium Hole Spin Qubits

// PhD Student IV - Simulation, Communication & Algorithms

14:00 – 14:10: **Frederike Brockmeyer** (ETH Zurich, Switzerland) O
Multimode Dynamics in Bulk Acoustic Quantum Transduction
14:10 – 14:20: **Marco Intini** (University of Pisa and INFN, Italy) O
Improving Ground State Accuracy of Variational Quantum Eigensolvers with Soft-coded Orthogonal Subspace Representations
14:20 – 14:30: **Yanis Le Fur** (Instituto de Física Fundamental, Spain) O
Entanglement of two qubits mediated by a TeraHertz channel
14:30 – 14:40: **Sara Navarro** (ICN2, Spain) O
Exchange–correlation functional cloning with neural networks
14:40 – 14:50: **Dominique Ronco** (Université de Toulouse, France) O
Floquet engineering of tight binding Hamiltonian in momentum space lattices
14:50 – 15:00: **Sara Tarquini** (Gran Sasso Science Institute, Italy) O
Drone Delivery Packing Problem on a Neutral-Atom Quantum Computer
15:00 – 15:10: **Mireia Torres Sala** (Catalan Institute of Nanoscience and Nanotechnology (ICN2), Spain) O
Strain-Mediated Lattice Reconstruction Enhances Ferromagnetism in Cr2Ge2Te6/WTe2 van der Waals Heterobilayers
15:10 – 15:20: **Bianca Turini** (ICFO, Spain) O
Forbidden Landau-Level Transitions and Mode Hybridization via Phonon-Polariton Nanocavities
15:20 – 15:30: **Francesco Aldo Venturelli** (Universitat Pompeu Fabra, Spain) O
Interpreting Convolutional Neural Networks by Constraining the Selection of Feature Maps through Quantum Annealer
15:30 – 15:40: **Michael Ifor Williams de la Bastida** (UCL, UK) O
Optimised Fermion-Qubit Encodings for Quantum Simulation with Reduced Circuit Depth
15:40 – 15:50: **Mohamed Meguebel** (Télécom Paris, France) O
Generation of frequency entanglement with an effective quantum dot-waveguide two-photon quadratic interaction
15:50 – 16:00: **Chaimae Chrirou** (Université Grenoble Alpes , France) O
Potential barriers are nearly-ideal quantum thermoelectrics at finite power outputy

15:50 – 16:30: *Coffee Break / Poster Session / Exhibition*

INDUSTRIAL FORUM

14:00 – 14:20: **Massimo Borrelli** (Bluefors Oy, Finland) I
What is the maximum control line density in a superconducting quantum computer?
14:20 – 14:40: **Felice Francesco Tafuri** (Keysight Technologies, Italy) I
Advancing the Design and Measurement of Modern Superconducting Quantum Systems
14:40 – 15:00: **Pau Jorba** (Kiutra, Germany) I
Rapid Characterization of Josephson Junction Devices Using an L-Type Rapid Fast Turnaround Cryostat
15:00 – 15:20: **Timothy Duty** (Qilimanjaro Quantum Tech, Spain) I
Coupled Fluxonium for Analog Quantum Computing
15:20 – 15:50: **Alvaro Caride-Tabares Sanchez** (IQM Quantum Computers, Finland) K
Making Quantum Datacenter Ready: Challenges and Opportunities

15:50 – 16:30: *Coffee Break / Poster Session / Exhibition*

16:30 – 16:45: **Aliki Athanasiadou** (Single Quantum B.V., The Netherlands) O
Multipixel SNSPDs for GHz-Rate and High-Dynamic-Range Single-Photon Detection applications
16:45 – 17:00: **Thomas Swift** (QUANTUM MOTION, UK) O
A superinductor in a 22nm FDSOI process
17:00 – 17:15: **Ruben M. Otxoa de Zuazola** (Hitachi-Cambridge, UK) O
Mapping of QEC – Codes in Restricted Geometries for Spin-based Quantum Technologies
17:15 – 17:30: **Valentino Jadrisko** (Constructor Capital, Switzerland) I
17:30 – 18:30: Round Table “Backing the Quantum Leap: Venture Capital Perspectives on Emerging Quantum Markets”

Thursday (30/04/2026)

09:00 – 09:15: **Ivan Amelio** (Université libre de Bruxelles, Belgium) O
Quantum simulation with Fluxonium Qutrit Arrays
09:15 – 09:30: **Nicolas Laflorencie** (CNRS, France) O
Cat states in the many-body localized phase
09:30 – 09:45: **Luca Giacomelli** (Université Paris Cité/Laboratoire MPQ, France) O
A Josephson junction in a multimode environment: emergent quantum phase transition and exact low-energy duality
09:45 – 10:00: **Stephan Plugge** (Silicon Quantum Computing, Australia) O
Large-scale analogue quantum simulation using atom dot arrays
10:00 – 10:15: **Tobias Grass** (DIPC, Spain) O
Localization and Condensation in Fractal and Hyperbolic Lattices

10:15– 11:00: Coffee Break

11:00 – 11:30: **Alexander Hamilton** (UNSW, Australia) I
Quantum Matter in Artificial Electrostatic Crystals
11:30 – 12:00: **Simon Zihlmann** (CEA Grenoble, France) I
Hole spin cQED: a bright future
12:00 – 12:15: **Jelena Klinovaja** (University of Basel, Switzerland) O
Robust Tripartite Entanglement Generation via Correlated Noise in Spin Qubits
12:15 – 12:30: **Markus Teller** (Institute of Photonic Sciences, Spain) O
Multiplexed distribution of light-matter quantum correlations over the metropolitan area of Barcelona
12:30 – 12:45: **Marc Vila** (Catalan Institute of Nanoscience and Nanotechnology (ICN2), Spain) O
Coupled Crystal Field, Spin and Orbital Physics in Altermagnets
12:45 – 13:15: **Alexandra Boltasseva** (Purdue University, USA) K
Machine-Learning-Assisted On-Chip Quantum Photonics: From Emitter Control to Integration

13:15: Closing