Superconducting Quantum Devices 2025 – SQD25

Monday 23rd June 2025

Rutherford Appleton Laboratory Harwell Campus Didcot OX11 0QX

Talk Programme

Time	Talk Title	Speaker
10:30 – 10:50	Arrival and Refreshments	
10:50 – 11:00	Welcome and Meeting Start	
11:00 - 11:20	A proposal for charge basis tomography of superconducting qubits	Malcolm Connolly, Imperial College London
11:20 - 11:40	Towards a micromechanical qubit based on quantized oscillations in superfluid helium	Priya Sharma, University of Surrey
11:40 - 12:00	Necessary criterion of quantumness for a quantum annealer	Alexandre Zagoskin, Loughborough University
12:00 - 12:20	Searching for Axions with Microwave C-Band Quantum Electronics	Edward Daw, University of Sheffield
12:20 - 13:20	Lunch and Poster Session	
13:20 – 13:40	Materials loss factor extraction techniques for superconducting quantum devices	Sergey Danilin, Oxford Quantum Circuits
13:40 – 14:00	ALD-Fabricated TiN/AlN/TiN-Nb Josephson Junctions: Process Development and Resistance Control through AlN Thickness	Hua Feng, University of Glasgow
14:00 - 14:20	In situ scanning gate imaging of individual quantum two-level system defects in live superconducting circuits	Riju Banerjee, National Physical Laboratory
14:20 - 14:40	Fast-tracking and disentangling of qubit noise fluctuations using minimal- data averaging and hierarchical discrete fluctuation auto-segmentation	Abhishek Agarwal, National Physical Laboratory
14:40 – 15:20	Break and Poster Session	
15:20 – 15:40	Thermal Capacity Mapping of Cryogenic Platforms for Quantum Technologies	Scott Manifold, Oxford Quantum Circuits
15:40 – 16:00	Superconducting THz quantum technology for ultrafast quantum networks	Kaveh Delfanazari, University of Glasgow
16:00 – 16:20	Towards Scalable Quantum Hardware: Integrated Control and Readout for Superconducting Architectures	Mustafa Bakr, University of Oxford
16:20 - 16:30	Meeting Close	
16:30 - 18:00	Networking and NQCC Tours	

Poster Session

Poster Title	Presenter	
Single-shot readout using JTWPA idler tone	Javier Navarro Montilla, National Quantum Computing Centre	
Nb-based Inductive Superconducting Transition Edge Detector for Quantum Communication	Benjamin White, National Physical Laboratory	
Developments in nanobridge lithography techniques for novel SQUID devices	Laith Meti, National Physical Laboratory	
Optomechanics transducer with SQUIDs for QLAN	John Gallop, National Physical Laboratory	
Rapid Relaxation, Hahn-Echo and Ramsey measurements for Superconducting Qubits	Masum Ishaan Uddin, National Physical Laboratory	
Implementing analysis routines for robust superconducting qubit benchmarking protocols	Wang Ngai WONG, National Physical Laboratory	
Protection of quantum information in small clusters of qubits	Yi Shi, University College London	
Single layer niobium nano-bridge based non-linear microwave circuit	Parth Bhandari, University College London	
Machine Learning based characterization of wafer scale superconducting qubits	Manognya Acharya, National Physical Laboratory	
Electric-Field Tuning of a Superconducting Resonator via the Aharonov-Casher Effect	Henry Chew, University College London	
Immersion cooling of superconducting quantum devices: a pathway to understanding sources of decoherence and instability	Daniel Doling, Royal Holloway University of London	
Design and performance of a mK Scanning Probe Microscope for Imaging Two-Level System Defects in Live Superconducting Quantum Circuits	Andrew R. Hutcheson, National Physical Laboratory	
Analysis of normal state data of Josephson Junctions through Simmons' model	Tanmay Chandane, University of Glasgow	
Design and Modelling of Superconducting Quantum Microwave Amplifiers for Fundamental Physics Experiments	Bai Tian, University College London	
Josephson-Junction Manufacturing Fabrication Optimisation	Dr Ehsaneh Daghigh Ahmadi, National Physical Laboratory	
ENGINEERING SUPERCONDUCTING SPIN-VALVE PERFORMANCE VIA HEAVY METAL INTERFACES	Iuliia Alekhina, University of Cambridge	
Impedance-matched CPW high kinetic inductance parametric amplifier	Cong Fu, University of Glasgow, James Watt School of Engineering	
Optimising Fluxonium Qubits for High Fidelity Single Flux Quantum (SFQ) Control	Leon Guerrero, University College London	
SiGe-based semiconductor-superconductor hybrid quantum circuit for scalable quantum computing	Paniz Foshat, University of Glasgow	
Gate-tunable graphene-based superconducting microwave quantum circuits	Shima Poorgholam-Khanjari, University of Glasgow	
Quantum Technologies with 2D Layered Superconductors	Mingqi Zhang, University of Glasgow	
Development of nanobridge-based SLUG amplifiers for fundamental physics studies	Ling Hao, National Physical Laboratory	