European Quantum Technologies Conference 2023
by Quantum Valley Lower Saxony

QUANTUM-READY, FUTURE-READY.
16-20 OCTOBER IN HANNOVER, GERMANY

POSTER SESSION OVERVIEW

First session on day 3 (Wednesday, October 18)

Day	Poster #	Presenting	Title
18.10.	1	M. R. Mahani	Machine learning based inverse design of semiconductor laser components using low-data-demanding algorithms
18.10.	2	Yasmin Rahimof	2D and 3D FDTD Simulations of Bragg gratings in GaAs-based Ridge Waveguides
18.10.	3	Kerstin Borras	Quantum Machine Learning - Status and Prospects
18.10.	4	Irina Heinz	Residual exchange interaction in linear spin qubit arrays
18.10.	5	Regina Finsterhoelzl	High-Fidelity Entangling Gates for a Register based on a Nitrogen-Vacancy Center in Diamond
18.10.	6	Gregor Pieplow	Generating entangled photonic resource states with color centers in diamond
18.10.	7	Dirk Oliver Theis	Parameter derivatives for Rydberg atom arrays
18.10.	8	Teresa Meiners	X-junction design and simulation of ion transport for implementation in the QCCD architecture
18.10.	9	Cem Güney Torun	Zero-Magnetic Field Quantum Control and Coherence Measurements of a Tin-Vacancy Color Center in a Diamond Nanopillar as a Spin-Photon Interface
18.10.	10	Pere Mujal	Time-series quantum reservoir computing with weak and projective measurements
18.10.	11	Tummas Napoleon Arge	Squeezed light source on lithium niobate on insulator without periodic poling for photonic quantum computing
18.10.	12	Dimitris Syvridis	Classification of data with a qudit, a geometric approach

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Day	Poster #	Presenting	Title
18.10.	13	Wael Yahyaoui	EQUALITY - Efficient 'QUAntum ALgorithms for IndusTrY
18.10.	14	Gloria Turati	A Benchmark Study of Adaptative Variational Quantum Algorithms on QUBO Instances
18.10.	15	Marco De Michielis	Simulation of Gate Fidelities in Small Arrays of Flip-flop Qubits in a Noisy Environment
18.10.	15b	Pablo Andres-Martinez	Distributing circuits over heterogeneous, modular quantum computing network architectures
18.10.	16	Davide Ferrari	A Modular Quantum Compilation Framework for Distributed Quantum Computing
18.10.	17	Mikael Lassen	Quantum frequency conversion a tool for bridging different wavelengths and hybrid systems
18.10.	18	Stefano Carrazza	An Open-Source Hybrid Quantum Operating System
18.10.	19	Samuele Grandi	Transmission of light-matter entanglement over a metropolitan network
18.10.	20	Raja Yehia	Quantum City: simulation of a practical near-term metropolitan quantum network
18.10.	21	Sandor Imre	Analysis of Entanglement-based Quantum WiFi Competition Resolution inReal Life Scenarios
18.10.	22	Martin Achleitner	Demonstration of GHz Sequential Time-bin Entanglement in a Metropolitan Fiber Network
18.10.	23	Dimitris Syvridis	PHYSICAL LAYER SECURITY USING QKD HIGH RATE KEYS
18.10.	24	Jingzhong Yang	High-rate intercity quantum key distribution with semiconductor single photon source based on 'Niedersachsen quantum link'
18.10.	25	Marcello Caleffi	Entanglement-based networks: towards a connection-oriented design?
18.10.	26	Valerio Pruneri	Developing Quantum Communication Secure Networks through QSNP
18.10.	27	Sören Wengerowsky	Efficient cavity-assisted storage of photonic qubits in a solid-state quantum memory
18.10.	28	George T. Kanellos	Sustained QKD link over a multiple ONT loaded carrier-grade GPON for FTTH applications.
18.10.	29	George T. Kanellos	Optimal Configuration for Key Management in Dynamically Switched QKD Networks
18.10.	30	Máté Galambos	Trusted nets: how to combine trusted nodes to enhance privacy

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Day	Poster #	Presenting	Title
18.10.	31	Argiris Ntanos	Demonstrating Single Photon Exchange over Rooftop-to-Rooftop Links and Evaluating Performance in Real-World Scenarios
18.10.	32	Tobias Gehring	QCI.DK: Danish Quantum Communication Infrastructure
18.10.	33	Marcello Caleffi	The Quantum Internet: Quest for a Paradigm Shift
18.10.	34	Sascha Neinert	Development of a Micro-Integrated Optically Pumped Magnetometer for Magnetomyography in Space
18.10.	35	William Evans	Optically pumped magnetometer arrays for electric vehicle battery characterization.
18.10.	36	Peter James Hobson	Magnetic field shaping for quantum sensors
18.10.	37	Marcel Martin	Nanoscale Nuclear Magnetic Resonance with NV centers in diamond
18.10.	38	Michał Parniak	Quantum sensing and transduction using hot Rydberg atoms
18.10.	39	Julian M. Bopp	Magnetic field camera based on infrared absorption ODMR mediated by diamond NV centers
18.10.	40	Claudia Stella	NV–based Quantum nano-sensor Reveal Temperature Variation Associated to Hippocampal Neurons Firing
18.10.	41	Gabriele Zanelli	Sensitivity Enhancement of Nitrogen-Vacancy based temperature sensor via Quantum Superposition
18.10.	42	Nimba Oshnik	Study of quantum sensors in laterally overgrown hole arrays in diamond
18.10.	43	Feng Xu	The development of quantum diamond microscopy for precise quantification of cellular forces
18.10.	44	Victor Jose Martinez Lahuerta	Artificial Intelligence for Quantum Sensing
18.10.	45	Mattias Kruskopf	Graphene-Based Quantum Hall Devices for Resistance Metrology
18.10.	46	Mattias Kruskopf	Quantum Anomalous Hall Effect Devices in zero external magnetic field for Resistance Metrology
18.10.	47	Sara Pourjamal	Wafer-scale method for amorphizing superconducting MoSi thin films for SNSPDs
18.10.	48	Mikhail Belogolovskii	Chiral Andreev edge states in Josephson junctions with an (NF)10N multilayered weak link
18.10.	49	Thomas Gerster	Optimized Single-Electron Pumps for a Quantum Current Standard
18.10.	50	Marjan Schubert	Superconducting radiofrequency resonator for ion traps

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Day	Poster #	Presenting	Title
18.10.	51	Lukas Kilzer	Scalable cryogenic trapped-ion quantum computing experiment design
18.10.	52	Andreas Reutter	New Photon Scanning Tunnelling Microscope for investigation of electroluminescence of single photon emitters
18.10.	53	Vaidik Avnish Sharma	Techniques to Variational Quantum Metrology using Optimized Parameter Estimation
18.10.	54	Sascha de Wall	Microtechnological Manufacturing Methods of Reflective Optical Gratings for Functional Enhancement in Atom Chips
18.10.	55	Jan Kiethe	An experimentation platform towards standardized characterization of ion traps for industry and research
18.10.	56	Nila Krishnakumar	Hybrid Integration and Microfabrication Technology for Scalable Ion Trap Quantum Computer
18.10.	57	Conrad Zimmermann	Miniaturized crossed beam optical dipole trap and enabling technologies for compact atom-based quantum sensors
18.10.	58	Vikas Remesh	Compact Chirped Fiber Bragg Gratings at 800 nm for Robust Single-Photon Generation from Quantum Dots
18.10.	59	Janpeter Hirsch	Bragg Grating Based Frequency Reference Module for Operation in Quantum Technology Applications
18.10.	60	Christian Flasch	Industrially microfabricated ion traps for quantum information processing and metrology
18.10.	61	Thomas Hummel	Cryogenic electronics for integrated SNSPDs
18.10.	62	Frederik Thiele	All-optical operation of a superconducting opto-electronic circuit
18.10.	63	Alejandro Sánchez-Postigo	Superconducting nanowire single-photon detectors integrated in sub-wavelength grating metamaterial waveguides
18.10.	64	Jan Markus Baumann	Trade-off design considerations for laser systems for high-end quantum sensor applications
18.10.	65	Shradhanjali Sahu	Satellite-Based Continuous Variable Quantum Key Distribution in Multiple-Input Multiple-Output Settings
18.10.	66	Thomas Hebdige	An assessment process for quantum random number generators
18.10.	67	Maria Ana de Matos Afonso Pereira	A Fast QKD Prototype Based on Photonic Integrated Circuits
18.10.	68	Tommaso Pregnolato	Fabrication of suspended “sawfish” photonic crystal cavities in diamond

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Day	Poster #	Presenting	Title
18.10.	69	Domenico Zito	IQubits: An all-in-one integrated qubit platform in commercial ultra-scaled Silicon foundry technologies for scalable monolithic quantum processors
18.10.	70	Sebastian Nagies	Native 3-body interactions for quantum annealing with trapped ions
18.10.	71	Boyang Chen	Combinatorial structural optimization using quantum annealing - feasibility and challenges
18.10.	72	Sara El Gaily	Constrained Quantum Genetic Algorithm for Maximizing Energy Efficiency in Downlink Massive MIMO Network for 5G Applications
18.10.	73	Jan-Niclas Kirsten-Siemß	Intuitive and Versatile Software for Real-world Quantum Sensors
18.10.	74	George Gesek	A Uniform Quantum Computing Model Based on Virtual Quantum Processors
18.10.	75	Nicola Franco	Efficient Mixed-Integer Liner Programming Decomposition Methods for Quantum Computing
18.10.	76	Christoph Kuenzler	Micro technological fabrication of low outgassing atom chips for the use in UHV environment
18.10.	77	Alister Davis	Bespoke field environments for quantum commercialisation
18.10.	78	Klaara Viisanen	Scalable solid state coolers for quantum technologies
18.10.	79	Stefan Rolf Huebner	What sets the most valuable patents in quantum computing apart from the rest?
18.10.	80	Shaeema Zaman	Empowering Quantum Technology Ecosystem with Transversal Skills
18.10.	81	Zeki Can Seskir	Democratization of Quantum Technologies
18.10.	82	Marina Natalucci	“Driving Quantum Innovation in Italy: Fostering a Precompetitive Ecosystem” - The role of the Quantum Computing & Communication Observatory of the Politecnico di Milano
18.10.	83	Benedikt Poggel	On Finding Good Quantum-Enhanced Solution Paths for Optimization Problems
18.10.	84	Manfred Rieck	Quantum computing at Deutsche Bahn - tradition meets deep tech - how-to convince industry of new technologies
18.10.	85	Rutger Ockhorst	Introducing quantum physics in secondary school through lesson materials on quantum technology
18.10.	86	Daniel Stuhlmacher	Virtual user platform as a low-threshold, time- and location-independent quantum technology training format

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Day	**Poster #**	**Presenting**	**Title**
18.10.	87	Angelo Compierchio	A Qbit program for Ecosystem Applications
18.10.	88	Franziska Greinert	Presenting the European Competence Framework for Quantum Technologies - Version 2.0
18.10.	89	Silvia Marigonda	Developing European quantum ecosystems for the Euro-Quantum Communications Infrastructure
18.10.	90	Jose Luis Rosales	Quantum Leap: Empowering Entrepreneurship and Training in Spain's Quantum Community at the Technical University of Madrid

POSTER SESSION OVERVIEW

Second session on day 4 (Thursday, October 19)

Day	Poster #	Presenting	Title
19.10.	1	Mykhailo Moskalets	Charge- and Spin- Dipole Excitations Produced on-Demand in the Fermi Sea
19.10.	2	Felix Mauerhoff	Edge emitting semiconductor laser emitting at 626 nm and 619 nm for usage in quantum information processing
19.10.	3	Christian Deppner	BECCAL - The Bose-Einstein Condensate and Cold Atom Laboratory
19.10.	4	Hector SIMON	Iterative Schrödinger cat states generation scheme using a quantum memory cavity.
19.10.	5	Emanuele Polino	Activating quantum nonlocality from Bell local states
19.10.	6	Alexander Wilzewski	Precision Spectroscopy of highly charged ions with sub-Hz uncertainty
19.10.	7	Jef Pauwels	Certifying long-range quantum correlations through routed Bell tests
19.10.	8	LM Arévalo Aguilar	The single-photon steering and the quantum mechanical free-interaction measurement
19.10.	9	Mher Ghulinyan	Monolithic integration of SiON photonic circuits with Si single-photon detectors for NIR-range and room-temperature operation
19.10.	10	Samuele Grandi	Detection of Single Ions in a Nanoparticle Coupled to a Fiber Cavity
19.10.	11	Andreas Schell	Spectroscopy of Single Photon Emitters for Quantum Technology
19.10.	12	Emma Vandrey	Imaging and laser systems for surface-electrode ion trap experiments
19.10.	13	Riccardo Pellini	Assessing how the structure of the QUBO problem affects the effectiveness of quantum annealing

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Day	Poster #	Presenting	Title
19.10.	14	Lauritz Keinert	Modification of glass by a laser for the use in micro-electric systems and quantum devices
19.10.	15	Elena Zhitlukhina	Size and dimensionality effects in superconducting NbN thin films
19.10.	16	Kerstin Borras	Precise Quantum Angle Generator Designed for Noisy Quantum Devices
19.10.	17	Riccardo Nembrini	Quantum Annealing-Assisted Bipartite Community Detection for Recommender Systems
19.10.	18	Sebastian Egginger	Optimizing hyperparameters using the geometric difference
19.10.	19	Vladyslav Los	Robustness of quantum algorithms against approximate data representations
19.10.	20	Aleksandra Buchta	Field emission current-voltage characteristics of field emitters fabricated by wafer dicing.
19.10.	21	Esther Villar-Rodriguez	ON THE QUANTUM-CLASSICAL SOLVERS: HYBRID OR IMBRICATED?
19.10.	22	Cornelis C. Bultink	Advanced quantum computing and quantum error correction with a scalable, distributed quantum control stack
19.10.	23	Younes Javanmard	Tensor-Network Assisted Quantum Algorithms for Quantum Simulations
19.10.	24	Daniel Borcherding	Real-time hybrid quantum-classical computations for trapped ions with Python control-flow
19.10.	25	David Kreplin	Reduction of finite sampling noise in quantum neural networks
19.10.	26	Pascal Halffmann	Quantum Computing for Multiobjective Optimization Problem: A First Approach
19.10.	27	Vaidik Avnish Sharma	Time Series Prediction using Quantum Neural Network and Deep Learning Algorithms
19.10.	28	Diego Andrade	The NEASQC Benchmark Suite: Benchmarking Quantum Computers Across NExt ApplicationS of Quantum Computing
19.10.	29	Pablo Díez-Valle	Multiobjective variational quantum optimization for constrained problems
19.10.	30	Alvaro Arco	High Accuracy Time Synchronization for Quantum Networking. White Rabbit / IEEE 1588 (PTP) High Accuracy Profile
19.10.	31	Jaspar Meister	Dynamical Simulation of Quantum Repeater Satellite Constellations
19.10.	32	Daniel Munoz	Accurate metrology to evaluate the security of QKD modules

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Day	Poster #	Presenting	Title
19.10.	33	Francisco Javier Cruz Hernández	Quantum Spread Spectrum for Tactical Communications
19.10.	34	Noel Farrugia	Quantum-secured communication systems for all: Merqury Cybersecurity and a case study from Malta.
19.10.	35	Tobias Gehring	Continuous-Variable Quantum Key Distribution at 10 GHz using an Integrated Photonic-Electronic Receiver
19.10.	36	Carsten Schuck	Photonic integrated quantum communication receivers with superconducting nanowire detectors.
19.10.	37	Timon Schapeler	Mega-Scale Quantum Detector Tomography using High-Performance Computing
19.10.	38	Alberto Rodriguez-Moldes Sebastián	Dynamical decoupling techniques for long-lived single-photon level storage in Pr-based quantum memories
19.10.	39	Giuseppe Vallone	Recent advances in free-space and fiber quantum key distribution
19.10.	40	Kabilan Sripathy	Satellite-based quantum communication and extended physical theory tests in space
19.10.	41	Martin Jutisz	A portable warm vapour quantum memory
19.10.	41b	Francis Marcellino	Heralded distribution of polarization-entangled photon pairs
19.10.	42	Jonathan Hänni	Towards functional quantum repeater links using rare-earth doped crystals
19.10.	43	Petra Scudo	Optimal measurements in QKD with non-orthogonal states
19.10.	44	Samuele Grandi	Long-distance multiplexed quantum teleportation from a telecom photon to a solid-state qubit
19.10.	45	Botond László Márton	Testing the integration of a Continuous Variable Quantum Key Distribution System
19.10.	46	Huy Q. Nguyen	Squeezing recovery by phase compensation in free-running detection of squeezed light
19.10.	47	Nina Amelie Lange	Cryogenic Degenerate Spontaneous Parametric Down-Conversion
19.10.	48	Deepesh Singh	Proof-of-work consensus by quantum sampling
19.10.	49	Mehrzad Firoozi	Stochastic Analysis of a Simple Interferometric Detection of Phase Diffusion in a Laser Diode for Quantum Random Number Generation
19.10.	50	Segolene OLIVIER	Waveguide-integrated superconducting nanowire single photon detectors on a 200 mm silicon photonics platform for quantum communications and computing

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Day	Poster #	Presenting	Title
19.10.	51	Justus Christinck	Radiometric application of a single-photon source based on a germanium-vacancy center in diamond
19.10.	52	Sten Wenzel	Monolithic Integration of Extended Cavity Diode Lasers at 778 nm and 1064 nm
19.10.	53	Johannes Dickmann	Advancing Microstructured Mirrors for Next-Generation Ultrastable Lasers
19.10.	54	Steffen Sauer	On-chip integrated photonics for high-performance quantumcomputing, atomic clocks and quantum sensing applications
19.10.	55	Saskia Bondza	Quantum Technologies for Optical Coherence Tomography
19.10.	56	Christoph Tyborski	Micro-integrated Diode Laser Modules for Operation in Quantum Technology Applications
19.10.	57	Wiktor Krasnicki	Resolving spectrally separated pulses beyond the Fourier limit using heterodyne detection
19.10.	58	Axel Schönbeck	Sensing beyond the shot-noise limit with Squeeze Lasers
19.10.	59	Muhammad Talal Ali Khan	Grating-based waveguides for quantum applications
19.10.	60	Mandip Singh	Quantum ghost imaging of transparent phase patterns with hyper-entangled photons
19.10.	61	Alain Lioret	Quantum Computing for Generative Art & Design
19.10.	62	Marco Bonkowski	The QuMIC project - Towards a scalable ion trap with integrated high-frequency control
19.10.	63	Nicolás Pulido-Mateo	Calculating an error budget for an ion-trap based quantum processor
19.10.	64	Ihar Babushkin	Manipulation of photons with refractive index steps flying with a speed of light for novel ultrafast photon processing
19.10.	65	Joseph Cannon	Polarisation study of single colour centres in aluminium nitride
19.10.	66	Alexey Kupriyanov	Performance evaluation of novel accelerometers for future gravimetry missions
19.10.	67	Christoph Tyborski	Extensive study of magneto-optical and optical properties of Cd1-xMnxTe between 675 nm and 1025 nm
19.10.	68	Ashwin Rajagopalan	High performance vibrational noise mitigation for atom interferometry with an accelerometer integrated reference mirror
19.10.	69	Hendrik Heine	Towards a high-flux single-beam BEC source for Quantum Technologies

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Day	Poster #	Presenting	Title
19.10.	70	Naceur Gaaloul for the CARIOQA-PMP consortium	CARIOQA-PMP: A Space Gravimetry Quantum Pathfinder Mission
19.10.	71	Mouine Abidi	Quantum inertial accelerometer for mobile application
19.10.	72	Alexander Herbst	Applications of tunable interactions and time-averaged potentials in atom interferometry sources
19.10.	73	Ali Lezeik	Gravimetry with the Very Long Baseline Atom Interferometry Facility
19.10.	74	Benjamin Tennstedt	Chances and Challenges of Quantum Inertial Navigation Systems
19.10.	75	Joseph Muchovo	Two-dimensional grating magneto-optical trap
19.10.	76	Dorthe Leopoldt	QUANTUS-2: Atom interferometry in microgravity
19.10.	77	Christian Struckmann	Quantum Sensors in Space for Fundamental Physics and Applications
19.10.	78	Daniel Emanuel Kohl	Towards a Spaceborne Two-Photon Rubidium Frequency Reference
19.10.	79	Waldemar Herr	AeroQGrav - Absolute airborne gravimetry using quantum sensors
19.10.	80	Vishu Gupta	Gravimetry with Very Long Baseline Atom Interferometer
19.10.	81	Ann Sabu	Multi-axis quantum gyroscope with multi-loop atomic Sagnac interferometry
19.10.	82	Matthias Gersemann	Experimental platform for multi-axis quantum inertial sensing
19.10.	83	Knut Stolzenberg	Inertial sensing utilising painted optical potentials
19.10.	84	Mikhail Cheredinov	Advanced methods for atom interferometry with ultracold atoms.
19.10.	85	Kilian Stahl	Measurement of the frequency ratio between neutral 87Sr and 115In+ at the 10-18 level
19.10.	86	Maximilian J. Zawierucha	Towards high precision quantum logic spectroscopy of single molecular ions
19.10.	87	Chetan Vishwakarma	The upgraded transportable optical lattice clock at PTB
19.10.	88	Elena Jordan	PIC-based clocks as quantum sensors
19.10.	89	Gabriel Müller	Optical and Magnetic Simulations for Quantum Sensors in Space
19.10.	90	Nilakantha Meher	Sensing of nonlinear quantum noise correlations
19.10.	91	Sören Dörscher	Reduction of the blackbody radiation and lattice light shift uncertainty of strontium lattice clocks

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Day	**Poster #**	**Presenting**	**Title**
19.10.	92	Moritz von Boehn	Towards (anti-)proton g-factor measurements using quantum logic spectroscopy
19.10.	93	Dongliang Cong	A transportable accurate optical lattice clock for geodesy and fundamental physics studies